THE DYNAMICS OF SOCIO-ENVIRONMENTAL CONFLICT WITHIN THE CHANGING CONTEXTS OF COMMON POOL RESOURCES

The Case of Water Management in the Jordan Valley

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ABSTRACT

This research adopts a framework that offers an understanding of conflict over environmental resources as a broader manifestation of social processes embodying dynamic socio-political, socio-economic and cultural dimensions. It focuses on understanding change in the management of common pool resources as part of historical transformations articulated by the presence of conflicts within seemingly harmonious historical periods and permanent systems. Using the water management in the Jordan Valley, the thesis follows the transformation of the construction of water as natural resource embedded within the broader dynamics of socio-environmental conflict; within the Jordan Valley in the beginnings of the 20th century, until its construction as a scarcity problem in Jordan's pursuit of integration within the neo-liberal global economic system. Following the historical turning points of the management of water resources in Jordan, this research offers a dialectic understanding of the various aspects of social processes and how alterations to them *shape* and *are shaped by* the changing contexts and the dynamics of socio-environmental conflict. The research revealed how East *Ghor* Canal project in the 1950s evolved and took shape within the pre-existing context of hierarchical power and social relations. Over the following four decades, the institutions established through the project became new fields for the exercise of power by the conventional privileged, leaving small farmers, including Palestinian refugees and female farmers excluded from the negotiation and decision-making forums within which the water policy strategies are outlined today. Consequently, those farmers are the most adversely affected by the changes in the water policy and revert to various forms of resistance and adaptation which are also dedicated by those farmers' social positionality and perception of themselves within the current power and social hierarchies.

DEDICATION

To Samer,

Who lived and helped me through every moment of panic, stress and despair...

...finding my determination when I could not,

Who rejoiced with me, over each little step and every minute of victory...

...to you, my dearest and our son, Zayn, I dedicate this work.

Salma

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ABBREVIATIONS

CBO	Community Based Organisation
CIA	Central Intelligence Agency
CJV	Central Jordan Valley
CPRs	Common Property Regimes
DA	Development Area
DoS	Department of Statistics
ECC	Economic Consultative Council
EGC	East *Ghor* Canal Project
EGCA	East *Ghor* Canal Authority
ENGO	Environmental Non-governmental Organisation
FWA	Farmers Water Association
GDP	Gross Domestic Product
GJFA	General Jordanian Farmers Association
GNP	Gross National Product
GTZ	German Technical Cooperation
IUCN	The World Conservation Union
KAC	King Abdullah Canal – formerly known as East *Ghor* Canal
JEPA	Jordan Exporters and Producers Association for Fruit and Vegetables
JHF	Jordan Hashemite Fund
JV	Jordan Valley
JVA	Jordan Valley Authority
JVC	Jordan Valley Commission
JVFA	Jordan Valley Farmers Association
MCM	Million Cubic Meter
MMRAE	Ministry of Municipalities, Rural Affairs and the Environment
MOA	Ministry of Agriculture
MOWI	Ministry of Water and Irrigation
MREA	Regional Mission for Water and Agriculture – French Embassy
NGO	Non-Governmental Organisation
NJV	Northern Jordan Valley
NRA	Natural Resources Authority
O&M	Operation and Maintenance

PLO	Palestinian Liberation Organisation
PRS	Property Rights Systems
SAPS	Structural Adjustment and Policy Support Projects
SJV	Southern Jordan Valley
TVA	Tennessee Valley Authority
UAF	Unaccounted for Water Loss
UNRWA	United Nations Relief and Works Agency for Palestine Refugees
USAID	United States Agency for International Development
USIA	United States Information Agency
VOA	Voice of America
WAJ	Jordan Water Authority
WTO	World Trade Organisation

PROLOGUE

'Among the rivers of the world, the Jordan is unique by a twofold distinction of nature and history.
There are hundreds of other streams, larger, more useful, or more beautiful;
[But] there is no other which has been more spoken about by mankind!'

George Adam Smith, 1905

In actual fact, the Jordan River would scarcely qualify as a rivulet to a tributary of the Mississippi. Along its lower course, the channel of the Jordan is only about 30 meters broad, and only 1 to 3 meters deep. Before its waters were diverted elsewhere for irrigation, its natural annual discharge was only about 1.2 billion cubic meters [...]. The Jordan's total natural flow is thus but a tiny fraction (less than 1.5 percent) of the normal discharge of the Nile.

In the context of the local environment, however, the importance of the Jordan cannot be exaggerated. Its role in history, too, has been great beyond rational measure [...]. Although the amount of water at issue is small, the rivalry over the Jordan is even more intense than that over the region's much larger rivers.

Daniel Hillel, 1994, p.156

While the above description of the Jordan River stems from the long history of conflict between the riparian states that share its catchment, it can also be used to describe the significance of the River at a more local level. The share of the river and its tributaries, which the northern part of the east of the Jordan Valley have access to, would sound as an even more insignificant issue for discussion. However, to the peoples of the Northern Jordan Valley, who suffered a history as dramatic as the nature of the valley itself, there is no issue as important to them as their right to its waters.

This is their story...

Salma Nims

INTRODUCTION

This research adopts a framework that offers an understanding of conflict over environmental resources as a broader manifestation of social processes embodying dynamic socio-political, economic and cultural dimensions. It focuses on understanding change in the management of common pool resources, not as an isolated event in history, but as part of historical transformations articulated by the presence of contradictions: that is conflicts within seemingly harmonious historical periods, and 'discontinuities'; that is processes of change, within seemingly permanent systems. The framework is employed to explore a number of issues in relation to socio-environmental conflict. First, through the exploration of the debate on the different historical and ideological basis of the management of common pool resources, the research examines the changing context of social thought and its subsequent influence on the human/nature relation. Second, the research offers a broader understanding of the influence of various aspects of social organisation and environmental regulation on the construction of property rights systems (PRS) as social processes. And finally, the research explores how changes in PRS are articulated within societies in terms of power relations, social organisation, culture and related social and material practices. The research aims to understand the dialectics of the various aspects of social processes and how alterations to them could *shape* and *be shaped by* the changing contexts and dynamics of socio-environmental conflict.

i. The focus of the research:

The research examines change in water management in the context of the Third World, using Jordan as the subject of its study. The reasons behind this choice are: First, water is a complex common pool resource and it is hard to define clear boundaries for its use. This is important in the context of changing PRS as conflict extends beyond the locality of the resource toward questions of legitimacy at the international levels (Keohane and Ostrom, 1995). Second, water scarcity is one of the most urgent environmental problems in the Third World and has been the source of inter-state tensions in the Middle East. Third, despite all that, 'little systematic work has been conducted on the political ecology of water use and management,' (Bryant and Bailey, 1997, p.193). There is a significant body of work on the geopolitics of water in the Middle East[1] yet little has been done on 'the role of water in human affairs, and how control over water use is linked to unequal power relations' (Bryant and Bailey, 1997, p.193) including those within the same community of users; which in many cases is presumed to be an homogeneous unit. This is specifically true to the Jordanian case, as the discussion of the dynamics of conflict over water resources within the Jordanian context was considered a taboo due to its 'sensitive' socio-political nature: hence constructing it as a highly technical problem only.

[1] Eg. Chapman and Baker, 1992; Hillel, 1994; Kliot, 1994; Dolatyar, 1995; Lowi, 1995; Allan and Court, 1996.

And last, the Third world, and Jordan in particular, underwent a rapid transition towards modernisation, characterised by the attempts to build a modern industrialised state with a focus on export oriented agriculture since the 1950s, followed by a restructuring process in the 1980s and the 1990s in the context of the growing globalised economy. The process involved opening the Jordanian economy to external investments, dropping bans on foreign competitive products, joining the World Trade Organisation (WTO), cutting subsidies to basic commodities and initiating public services privatisation processes. In the late 1990s, those policies started to directly affect the water sector in Jordan. One of the major state interventions which started in the 1950s, East *Ghor* Canal (EGC), has been going through a process of "reassessment" by aid agencies–influenced policy makers since 1998. The project, which until recently was considered the showcase of Jordanian development receiving substantial part of its foreign aid, is being considered now unfeasible. Both the premise of EGC in the 1950s and the basis for its criticism today share the same governing goal: the management of water resources in order to promote economic growth by using technical approaches. While the EGC project pursued such goal by transferring the customarily managed irrigation water in the Jordan Valley to the state, the policies adopted since the 1990s, call for the active participation of the private sector in previously government-run utilities.

This research critically examines the approach of both debates in terms of the *goal itself and its means*, which overlook the broader dynamics of socio-environmental conflict. In order to understand the complexity and conflict that characterise the irrigation water sector today, it is important to examine its historical transformations within their broader socio-political and socio-economic contexts. The broad argument of this research is that the present 'realities' of the irrigation water sector are *not* the direct outcome of *a specific project* – the East *Ghor* Canal. They *are* the results of transformation processes, at the national and local levels, with which *the project articulated*. However, the articulation of the project within the dynamics of socio-environmental conflict has had a defining role in the construction of the realities of the Valley's people. A project, which initially targeted the settlement of Palestinian refugees in the Jordan Valley, resulted with the refugees being its least beneficiaries and consequently becoming the most adversely affected group by today's water sector policy changes. While the EGC project overlooked the dynamics of socio-environmental conflict in the Valley, both in terms of its problem definition and implementation, it also dismissed the presence of women as a specific target group, who would also be the most adversely affected by water sector policy changes. Although the research points out Palestinian refugees and female farmers as the least likely beneficiaries of the EGC project and the most adversely affected by current policy changes, it also reveals that peasant farmers of the Jordan Valley did not reap the full advantages of EGC project and remain today of a predominantly lesser social and economic status within the Valley.

The project involved the state's appropriation and diversion of the Valley's main sources of water into a main canal, from which agricultural units received irrigation water as allocated and managed by the state-run authority, which replaced the prevailing customary water distribution arrangements. The land reform which accompanied this initiative, was supposed to improve the irrigation of agricultural land and the intensification of its use. When EGC project was implemented in the Northern Jordan Valley (NJV), the research area was comprised of: the powerful ruling tribe of *Ghzawi*, which owned the largest part of the agricultural land in the area, settled peasant communities of various origins who cultivated land on small plots for subsistence or worked on larger plots for the advantage of the *Ghzawis* or absentee landowners from mountain towns and the urban élite, and Palestinian refugees who fled the aggression of the Israelis in 1948 and were predominantly surviving on sharecropping practices.

The research revealed that the project overlooked the complexity of the multiple and overlapping unequal power relations prevailing in the area, which were expressed in, reinforced by and embedded within land relations and the customary practices regulating the distribution of water resources. Those set-ups were manipulated by powerful *Ghzawis* for their own advantage, but were also accessed by weaker male actors, such as peasants and Palestinian refugee sharecroppers, through the traditional social relations prevailing within the Valley. The EGC project evolved and took shape within the pre-existing context of hierarchical power and social relations. The research revealed that the implementation of the project was manipulated by the *Ghzawis'* power and their access to newly established state-authorities, minimising their losses and making the most of the project's benefits. The urban élite and entrepreneurs used their access to power networks that extended beyond the project's locality to benefit from it, too. While some small peasants managed to access small agricultural units, of least soil quality, within the project, Palestinian refugee farmers where denied access to the project due to the powerful monopolisation of knowledge by the *Ghzawi* chiefs and the Palestinians own misconceptions about their right of return. Over the following four decades, the institutions established through the project became new fields for the exercise of power by the traditional and emerging power holders and spaces for exclusion of the traditionally weak actors, including women. Thus, the claimed change of unbalanced socio-political and economic relations through state's appropriation of water management and abolition of the feudal system prevailing in the Valley in the 1950s did not go beyond the superficial change of the formal structure of those relations. This mainly disrupted the customary basis for cooperation and conflict resolution within the area without managing to challenge other forms of unbalanced power relations, which still exist today in different forms, between different actors and at different levels.

As water scarcity became high on the national political agenda under World Bank pressure, conflict over decreasing allocated irrigation water became more observable and latent conflicts started to

surface in overt forms. The dynamics of those conflicts extends beyond institutional questions in regard of access to and control of water resources to encompass meanings, values and beliefs, living practices, and social and power relations. These dimensions of water and land property rights have been largely overlooked in most studies on water issues in Jordan, which focus on the technical facets of the problem[2]. While these studies often refer to the competition between productive sectors, they do not acknowledge the presence of conflict over water resources within Jordanian society. Thus, this research aims at conducting a further exploration of the politics of socio-environmental conflict over water resources in the Jordanian context, using a post-structural political ecology approach.

The importance of Third World political ecology has been growing largely due to the recognition of its role in integrating '...concerns of ecology and a broadly defined political economy' (Blaikie and Brookfield, cited in Bryant and Bailey, 1997, p.20). Political ecology has mainly developed from geography-based research. However, it borrows from a wide range of disciplines in social sciences, especially anthropology and sociology, as they offer venues for a broader understanding of environmental issues. Cultural ecology, in particular, which has been developing since the 1960s and 1970s, offers a more sophisticated understanding and appreciation of the dialectic relation between culture and environment and a focused understanding of the role of power relations in conditioning human/environment interactions (Bryant and Bailey, 1997). Thus, this research will be referring to that wide range of social science research as it builds its theoretical framework, which acknowledges a core role for discourse, knowledge and power in mediating political ecological conditions (Escobar, 1996), without marginalizing the influence of social and material practices in such processes.

As a resource, water is becoming a highly political issue in the context of changing property rights systems (PRS) in many societies. A post-structural political ecology approach would offer a framework to a broader understanding of PRS *per se* and change as a social process. Most of the debate on PRS evolved within two fields of study: economics, in particular environmental economics, *and* anthropology. Economic-focused studies deal with PRS as institutional arrangements (e.g. Ostrom, 1990), whose success is based on an economic rationality for co-operation, and where choice is based on cost and benefit assessments, overlooking the socio-cultural dimension of PRS and the importance of values, meanings and social relations in the articulation of PRS. On the other hand, and within the debate against the enclosure of the commons, cultural studies focused on the romantic notion of common property rights regimes as nature benign systems within homogenous societies (e.g. Goldman, 1998a), overlooking the heterogeneous construction of societies expressed in multiple identities and overlapping and hierarchical power relations. Political ecology offers a broader

[2] Examples: World Bank Policy papers (World Bank 1988; World Bank 1997); Scientific research (Salameh and Banayan, 1993); private consultation work (ERMC, 1997; FORWARD, 1997), and governmental reports and policy papers (WAJ, 1997a and 1997b; MWI, 1997a and 1997b).

perspective, which merges the concerns of political economy with the socio-cultural construction of the environmental problematique. More importantly, a *post-structural* political ecology perspective offers an understanding of *change* in PRS as a social process within broader historical transformation processes.

Foucault's analysis of 'permanences' and 'discontinuities', in the study of history and epistemological change (1972), contributed to altering traditional approaches to the study of change. The approach of this study hinges on understanding PRS as 'permanences' within broader social processes within which contradiction is present and from which 'discontinuities' could emerge. This contributed to understanding three facets of PRS and change: First, the conventional question of change from one form of PRS to another, not as a rupture, but as a process where unequal power relations, use of discourse, manipulation of values and fantasies could play a major role; second, the study of specific PRS as a 'permanence' within which contradictions – or conflicts – occur but not necessarily result in the entire change of the system, but its manipulation, by both the powerful or the weak, through discourse, latent exercise of power, the use of social networks, etc.; and finally, the fact that despite the disappearance of certain 'permanences' – PRS – some of their attributes continue be present within the society through the dynamics of social process, such as power relations, material practices, values, social relations. This thesis adopts Harvey's (1996) 'moments' of social process: discourse, power, institution building, values and beliefs, social relations and material practices, as a framework to understand the dynamics of socio-environmental conflict in the changing context of PRS, water management in particular.

ii. The research case study

The research is based upon fieldwork carried out in the Jordan Valley during the summers of 2000 and 2001: The first round of field work, the *exploratory fieldwork*, helped identify the Northern Jordan Valley (NJV) as the broad area of the research, while the specific boundaries of the case study area were set in the early stages of the second round of fieldwork, the *final fieldwork*. A number of reasons contributed to the choice of NJV as a broad area of research. The population dynamics in NJV offered an interesting case for exploring a variety of positions within the local community. Furthermore, the area offered a multiplicity of situations regarding water property rights: state-controlled water property rights, commonly-managed water resources due to informal fragmentation of land ownership and left over water rights in the side valleys, and donor-initiated pilot projects reviving farmers' management of water distribution. The NJV is also the area in which the construction of the East *Ghor* Canal started in 1958. The specific boundaries within NJV set for the research were established during the final fieldwork using historical documentation and maps.

Considering that the *Ghzawi* family was the largest *Iqta'*[3] tribe in NJV, the boundaries of the research case study were those delimiting the area, under the control of the *Ghzawis* prior to land settlement in the area. The authority of the *Ghzawis* at the time of the construction of the project was attributed to the role of their *Emir* as the local chief and patron of the area, in addition to their access to large agricultural property within the project area.

During the final fieldwork, early interviews with members of the *Ghzawis*, government employees and historians in addition to the consultation of available Ottoman records were employed to draw the specific boundaries of the research area. This incorporated three towns: *Sheikh Hussein*, *Al-Mashare'*, and *Wadi Arrayyan*. Most of *Ghzawis* registered property was concentrated in the north town of *Sheikh Hussein*. However, their territorial control extended to include those three town areas. Each of the three town councils incorporates a number of villages and small settlements making up their administrative boundaries. In the year 2000, the total population of the researched area was 36,259 (DoS, 2001). The administrative boundaries of the towns do not include the agricultural land plots under the jurisdiction of Jordan Valley Authority (JVA). The research case study area boundaries were set to include the overlap between the three above mentioned town boundaries with the parallel agricultural land plot set by the administrative boundaries of JVA. Those included eight Development Areas (DA10 – DA17) out of the 24 established during the first period of the construction of EGC. All of the interviewed local population in the three selected town boundaries practiced agriculture on land within those selected eight development areas.

As mentioned above, the area offers a diversified population dynamics despite the geographic proximity of the three towns. The area of *Sheikh Hussein* presents the most diversified social make-up including the majority of *Ghzawis* in the entire case study area, peasant farmers of various origins, some of slave ancestry who used to work for the *Ghzawis*, and landless Palestinian refugee farmers who practiced agriculture on rented land. *Sheikh Hussein* remains the area where the *Ghzawis* influence is most felt. Some *Ghzawis* remain in *Al-Mashare'* which now predominantly inhabits settled nomadic Palestinian refugee tribes and peasants who mostly rent out their land to Palestinian refugees. In contrast to these two towns, *Wadi Arrayyan* is predominantly inhabited by a Palestinian tribe, *Turkman*, which chose to own land and settle in the Jordan Valley in 1950. No significant groups of original peasants live in the area and the tribe which used to own the land prior to 1950, *Zeinati*, is a minority in the area as most of its members opted to sell their land and move to urban areas.

[3] An Islamic and latter Ottoman socio-political and economic setup that is similar to that of the European feudal system.

iii. The research methodology

Qualitative research methods were adopted for the conduct of this research and examining its hypothesis. Such methods offered the in-depth understanding of the dynamics of socio-environmental conflict because of their interpretative and explanatory approaches (Warwick, 1993; Denzin and Lincoln, 1998). Such methods contribute to the recognition of the specificity of the context and the subjectivity and positionality of both the researcher and the researched in the context of the study. These methods offered the flexibility in the use of the research tools and allowed for reflection and modification during the course of the fieldwork. As the theoretical approach of the thesis adopted the study of conflict and change within broader historical transformations, the research methodology follow a historical method in its conduct interrogating both historical text and oral history in its study of water management within the Jordan Valley. Below is a short description of the research and sampling methods employed in the field, which are detailed in Appendix I.

As mentioned above the research was carried out in two main stages: The *exploratory fieldwork* and the *final fieldwork*. The exploratory fieldwork had three main objectives: the selection of the case study, testing the research tools and methods and planning the final fieldwork. It involved the investigation of the three parts of the Jordan Valley: Northern, Southern and Central as possible areas of research focus and a pilot research in the town of *Waqqas* in NJV to test the research assumptions as well as its tools and methods. The exploratory fieldwork involved the collection of primary and secondary data. Secondary data included statistical information from the Department of Statistics and official documentations from the Ministry of Water and Irrigation (MOWI) and the involved aid agencies. Non-official sources included documents received from local and international experts involved in consultation work with the ministry. The *exploratory fieldwork* also benefited from following the current media coverage of water issues to identify major upcoming changes and the current national debate on the sector.

Primary data collection involved semi-structured interviews, observation and focus groups. In each of the three exploratory areas five semi-structured interviews were conducted with farmers of different age groups and gender. In the pilot area, further interviews were carried out with identified members of the community. In each of the three areas, a meeting with a community based organisation (CBO) leader helped in identifying those sources and characterising each of them. Semi-structured interviews were also conducted with two private business representatives, two Jordanian experts on the Jordan Valley, and two government officials in MOWI. Three focus groups meetings were carried out in the pilot area: one with a group of young males, one with a group of women of various ages and occupations, and a group of farmers. Three household visits were carried out in the pilot area, and one in each of the other two exploratory areas.

The *final fieldwork* involved an extensive collection of primary and secondary data. Collected secondary data included the Ottoman records, paper and media documentation from newspapers archives, Jordan TV and radio archives, government official documents, aid agencies studies, private consultants studies, land and water codes and regulations, current and past registered land rights, documented tribal history and population movements in the Jordan Valley (JV) as well as statistical information on Jordan and the Valley in particular. Primary data was obtained using semi-structured interviews with the local population, CBO leaders, members of non-governmental organisations, private businesses, governmental officials and employees as well as local and international experts in the field. Observation was also employed during local meetings between farmers and government officials in the area and in JVA local offices as well as local social meetings in guesthouses. One hundred and seven interviews were carried out with the local population including visits to 20 households, 12 active members of CBOs and NGOs, and four entrepreneurial and absentee landowners. Nine current and former government officials were interviewed in addition to ten employees at the regional and local level. Twelve local and international experts contributed to the understanding of the conflict and offered insights to the sector and the area.

As a qualitative research, the study depended on theoretical sampling rather than statistical sampling in its conduct. Apart from the local population, all other sources of information were *purposely selected*. 'Snowballing' contributed to finding other sources of information. The sampling of local population depended on the principle of saturation sampling. The statistical information on the area does not break down the local population according to the divisions which this research is concerned with, i.e. small farmers, large landowners, etc, nor the more complex population make up in terms of regional origin. The exploratory fieldwork revealed the 'rough' socio-political characterisation of each of the three towns. The sampling method then aimed at conducting in-depth interviews with actors from each of the different socio-political groups. Significant effort and rigorous investigation were carried out to ensure that the sample of the local population had sufficient representation of different gender, age, and regional origin, without claiming precise percentage representation.

The timeframe covered by the research was set to commence three decades prior to the establishment of the canal in 1958 and extending till our present day. The commencement point of the research in the 1920s is marked by the British Mandate over Jordan and the first attempts to settle land rights in the region. However, those eight decades were not an exclusive period of study. In order to understand the socio-political and economic dynamics of the region prior to the establishment of the state of Jordan and its formal institutions it was important to research the region's history during the Ottoman control which prevailed from 1516 till 1916. The *extended timeframe* could not possibly be covered within the confinements of this research. With the exception of land rights registry in the Jordan Valley during the end of the 19th Century, the study of the

Ottoman rule period and its influence on the management of land and water resources in the region and specifically in Jordan was based upon historical studies and books that relied on the Ottoman archives. Details of the ecology and lifestyle in the Jordan Valley in the same period depended on travellers' books and memoirs in the area. Indeed, the research could not assume that the memory of its eldest interviewees reached back beyond the 1940s. Thus, the information on the two decades of the British Mandate is also limited to bibliographical references, and the laws and regulations of the period found in the Jordanian official Gazettes as well as some old newspapers archives. Thus, the *main timeframe* of the research fieldwork extends from the early 1940s to the present time.

iv. The limitations of the research

Although every effort was made to make this research as comprehensive and precise as possible by exploring all possible resources and investigating the perspectives of the various stakeholders and actors, it is impossible to claim that it is exhaustive or value-free. The limitations of this research can be categorised under two main dimensions:

1. Limitations of secondary information:

The further back in time the secondary information collected is the less accurate and complete it is. Although historical studies and memoirs offered a great insight of the Ottoman period, it was difficult to find consistent reference to the specific research area. Cross-referencing of those sources was made to ensure the accuracy of the information. Old land maps and registration information were also incomplete. Cross-referencing with other sets of incomplete resources was used to obtain full representation of old land and water rights in the area. Finally, despite the ability to access an extensive collection of government reports, policy papers and aid agencies studies, some were labelled as confidential and reference to them was prohibited. However, the information found in those sources was used to probe issues during interviews with government officials and representatives of aid agencies.

2. Inaccuracy of oral history

The number of interviewees from the local population who actually lived the period prior to the EGC project was limited. The information received about that period was not taken unquestionably because it depended on the distant memory of older population and the hearsay of those whose parents lived that period. Thus, throughout the research findings chapters, conclusions about the period are presented with cautionary statements.

3. Issues of bias and subjectivity

Although the exploratory fieldwork helped in identifying and dealing with the difficulties posed by issues of bias and subjectivity during the fieldwork, those concerns cannot be entirely eliminated. Generally, interviewees tend to make assumptions about researchers and in many cases their answers could be affected accordingly. Longer and repeated interviews helped in minimising the effect of those assumptions. Over the months, the researcher managed to build trust with the local

population. Answers that were given in the beginning of the research which were based on preconceived ideas about the research and the researcher changed as questions were reiterated over time. However, it is difficult to ascertain that the position of the interviewees, or the researcher, is not value-ridden.

v. The structure and content of the thesis:

The thesis is structured around eight chapters. The first and second chapters introduce the theoretical framework and argument on which this research is based. **The first chapter** focuses on developing an understanding of PRS as a social process. It sets out by introducing the 'political ecology' project, which initially started as a critique of 'Development', but opened up in its multidisciplinary approaches a venue for a broader understanding of conflict over environmental resources in the changing contexts of PRS. The chapter introduces Harvey's (1996) framework of 'moments' of social process, used as a departing point to organise the analytical framework of this research, which is then employed to examine the definition of different PRS. The chapter's discussion highlights the limitations of the conventional approaches to understanding PRS in attending to questions of socio-environmental conflict. **Chapter Two** aims at developing the analytical framework applied to examining socio-environmental conflict within the changing contexts of common pool resources in the selected case study. This is achieved by first offering a comparative analysis of the different forms of PRS within the socio-environmental debate, analysing their underlying ideologies and principles. It then examines how changes in PRS are, simultaneously, a manifestation and result of the fundamental changes in the prevalent socio-political organisation of the concerned societies. The chapter concludes that despite the possibility to propose a 'universal' definition for different PRS, each of those 'structures' are continuously subject to individual or collective 'agency', to either change how those systems operate or replace them with new systems. This reinforces the need to study PRS as a social process that is continuously subject to historical transformations that are not necessarily observed as specific 'ruptures' in history.

The third chapter offers a general understanding of the context within which this research is set. As the thesis adopts a historical method, it should be noted that even the contextual chapter is dealt with in an interrogative and critical manner. The chapter highlights the socio-political history of Jordan and its development processes and their implications on the conflict over water resources. While most of the content of this chapter was prepared using secondary data prior to the fieldwork, a substantial part of its arguments, especially in relation to the case study area, is a result of fieldwork research and further secondary data collected during the same time. This includes books, government and aid agencies reports, newspapers and TV reports and interviews. The chapter commences with introducing Jordan as a political entity with its specific dynamic demography and geographic limitations. This would highlight the high profile which water has taken and how it is being defined

as a demographically-induced environmental problem. The chapter presents a brief analysis of Jordan's water policy in the context of social change offering a preliminary schematic view of some of the observable poles of conflict over water resources at the Jordanian level beyond the simplistic demographic answers.

Chapter Four introduces the specific historical and ecological contexts within which land and water was managed in the JV. It offers a historical account of the main characteristics of the Ottoman rule, which prevailed in the region till the early 20th Century, in order to develop some assumptions about the socio-political and socio-economic outcomes of the interactions between those characteristics and the social conditions within the Valley. An account of the tribal history of the area and the major population movements that took place in the past century is also given, as well as an account of the history of land and water rights in the JV. This includes the laws and regulations introduced at the national level, which were directly related to interventions in land and water property rights in the Valley, such as EGC project. The chapter concludes with an outline of the major turning points of the management of irrigation water resources in the JV, upon which the following four chapters are based: the pre-'development' era extending between 1921 until 1957, the construction of the canal period in 1958 until its halt in 1967 due to the Six-days War, the integrated development period, which commenced in 1973 and continued well into the late 1980s and the present day characterised by economic liberalisation processes which started in the late 1980s.

Chapters Five, Six, Seven and Eight present the crux of the research findings. They are devoted to presenting and analysing the dynamics of socio-environmental conflict within the changing contexts of managing water resources in the JV. In **Chapter Five,** the analysis of the social process focuses on prevailing power relations in NJV with reference to agricultural practices under the traditional and customary land and water rights prior to the construction of EGC. The chapter commences with introducing the *Ghzawis'* rise to power in the region and moves on to highlight the interdependence of social relations and power relations and their influence on access to land and water in NJV. It also explores the role of religion and tribal institutions in reinforcing symbolic relations as well as material practices in terms of access to land and water. The chapter's findings reveal that despite the embedded inequality and unbalanced power relations in the social processes at the time, the people of the valley had individual and collective access to means through which their position in overt and covert conflicts were mitigated.

Chapter Six examines the socio-environmental change that took place from the beginning of the construction of EGC until its interruption in 1967. The discussion outlines the prevailing discourse at the Middle-east and national levels that paved the way for the idealisation of the project at the local level. It also explores the change in land and water property rights introduced by the project and the

impact of those changes on land ownership patterns in the Valley. The resulting land ownership patterns were the product of not only the regulations of the land reform process but also the discursive processes that took place at the time of the land appropriation and re-distribution. The chapter elaborates on the changes the project brought on values, agricultural practices and the farmers relations *vis-à-vis* landowners, as well as, the state as the result of the new institutional formations introduced by the project. The chapter highlights the role, which official discourse can play in constructing bias against certain PRS, i.e. 'commonly' managed water resources. It also reveals the various discursive practices which the traditionally powerful employed to manipulate the process of change to their advantage. However, exclusion from the benefits of processes of change is not necessarily always external. Some groups could self-exclude themselves due to their held values, such as Palestinians holding on to their right of return, or their material practices as ways of life such as herd owners.

Chapter Seven discusses the period when the Jordan Valley Authority was established as an integrated development authority in 1973. The discussion explores how access to land and irrigation water was articulated within those contexts and how the new era involved the entering of the urban élite to the valley due to the development of agricultural practices as a capital accumulation practice. Central to this period is the state's role in the establishment of 'collective institutions' and its reflection of the articulation of power relations at both the local and national level. This period demonstrates the role of the media in constructing new visions in preparation for major policy changes. Due to the shift to integrated development, EGC ceased to be an irrigation project, and the JV as a whole became an icon of development. The analysis of the social processes during that period revealed how the introduction of new meanings and values within the area had an important influence on the perception of water as a resource, as its value became associated with commercial rather than subsistence practices.

The end of integrated development 'era' was characterised by water scarcity and over-depletion of water resources. It was followed by a major policy reassessment period, typified by major financial, technical and policy formation inputs by international aid agencies that commenced with the establishment of the Ministry of Water and Irrigation in 1988 and is still going on till the present day. **Chapter Eight** analyses the social processes within the study area in the context of those national changes and their implications at the local level. The chapter also presents a short discussion of the current experience of the GTZ in involving the farmers in the distribution of irrigation water resources in NJV. Within this, conventional powerful and original large landowners seem to be least affected by the upcoming changes and will probably benefit from them, while those small farmers are facing the uncertainty of the future of their living practices on which their symbolic identity and materialistic survival depends. Small farmers including Palestinian refugees and female farmers seem

unable to act collectively to resist the possible influence of those changes on their lives due to the long history of failed cooperative institutions and the feelings of marginality which the Palestinian refugees and female farmers suffer due to their consistent exclusion from collectivities.

Finally, the **Conclusion** brings together the theoretical arguments of this study. A contextual approach in understanding socio-environmental conflicts as a social process can elevate the definition of 'environmental problems' to a more clarified level that extends beyond the technical definition. Environmental problems should no more be defined as problems of scarcity, quantity or quality. They need to be approached as socio-environmental conflicts not only over resources but over meanings, representation and forms of relations. This is considered quite important in the context of the environmental debate and in the face of the perplexity of observers of problematic ecological settings who wonder why despite the severity of a certain 'environmental problem' no form of positive collective action seems to be taken in order to ameliorate them.

CHAPTER ONE

PROPERTY RIGHTS SYSTEMS AS A SOCIAL PROCESS

A post-structural political ecology approach

Introduction

This chapter introduces the theoretical framework adopted for understanding socio-environmental conflict as part of a broader social process that goes beyond the conventional understanding of 'environmental conflict' as a conflict over access to and control of natural resources, to explore conflict over meanings, representations and forms of social relations. The approach is grounded in the disciplinary field of post-structural political ecology, which has been taking shape since the late 1980s. Although its proponents still believe that political ecology lacks 'a coherent theoretical core' (Moore, 1996, p.125), it offers wider venues for understanding the embeddedness of socio-environmental conflict and change within the complex dynamics of social processes. The thesis offers a broader application of post-structural political ecology than that of the First World political ecology critique of the global environmental condition or the case-study based exploration of development in the Third World discussed in the first section of this chapter. The adopted theoretical framework internalises the diversity of the notions and concerns of post-structural political ecology in a dialectical manner, which allows the exploration of historical transformations as a continuous articulation between 'permanences' and 'discontinuities', structure and agency, the 'universal' and the 'contextual'.

The chapter commences with a discussion of post-structural political ecology as an evolving field of study. It then moves on to introduce the theoretical framework, Harvey's six 'moments' of social process, used as a systematic, yet fluid, framework, which allows multi-entry points to understanding socio-environmental conflict. This includes: discourse, power, social relations, values/beliefs, institutional building and material practices, and would allow the exploration of various conflicts, within changing contexts without pre-determined assumptions about the 'course of development' of conflict and change. The framework is employed in this context to explore how the 'moments' of social process could be articulated to construct, reinforce and/or define certain property right systems as 'permanences', as much as they could operate as places from which contradiction, contestation and change emerges. The chapter focuses on discussing how each 'moment' could operate in various PRS contexts, constructing them, reinforcing them, as well as challenging and transforming them. The arguments of this chapter highlight the limitations of the conventional approaches to understanding PRS in attending to questions of socio-environmental conflict, reinforcing the broader possibilities offered by the theoretical framework adopted by this research.

I.1 The 'Political Ecology' project – *Towards a theorisation of the 'development critique'*

Peet and Watts (1996b) mark the emergence of political ecology in the Marxist-influenced analysis of the environmental condition in the late 1970s and early 1980s. As a research approach, political ecology, widely associated with Blaikie and Brookfield's work in the 1980s, 'combines the concerns of ecology and a broadly defined political economy... [which] encompasses the constantly shifting dialectic between society and land based resources' (Blaikie and Brokkfield cited in Peet and Watts, 1996b, p.3). Political ecology was widely taken up by geographers, anthropologists and historians and was further influenced by the postmodern discourse on development. The late 1990s witnessed a growing literature on political ecology (e.g. Hannigan, 1996; Peet and Watts, 1996a, and Bryant and Bailey, 1997) that embraces the post-structuralist concerns with 'knowledge-power, institutions and regimes of truth, and cultural differences' (Peet and Watts, 1996b, p.2). Although a mainly geography-based field, political ecology borrows from a wide range of disciplines in social sciences, especially anthropology and sociology, as they offer venues for a broader understanding of environmental issues.

It can be argued that political ecology did not emerge as a theoretical field *per se* as much as it was a critique of the development and modernisation process and its adverse effects on the environments and lives of those at which it was targeted. The current state of the environment and the reversal of the ecological crisis caused by Western modernisation processes is a major concern of what can be called "First World political ecology"; as its analysis of the environmental crisis was mainly focused on industrialised societies and their impact on the global environmental conditions. Atkinson (1991) defines political ecology as a project calling for a 'more practical look at how we might go about building a world that will obviate the ecological catastrophe expected to result from continuation of our current cultural trajectory' (1991, p.193) – a project to achieve 'Green Utopia'. Goldblatt, (1996) suggests that Gorz's critique of capitalism, using 'a Marxist political economy that pays close attention to environmental issues' (p.87) laid the first principles of political ecology. Gorz focuses on the intersection of economic and political power in the production and control of environmental degradation and the socio-economic consequences of environmental degradations –thus, revealing the 'environmental limits of social democracy' (p.111).

In *Liberation Ecologies*, (1996a), Peet and Watts focused their analysis of the relationship between the environment, development and social movements, aiming at contributing towards a post-structuralist critique of development, in order to liberate aspirations from the effect of the Western discursive formations of development. The collection of works in Peets and Watts book (1996a) marks a shift from the critique of the Western Modern culture to a case-study based exploration of the political ecology of development in the Third World. The work of Bryant and Bailey (1997) offered an exploration of the politics of environmental conflict in the context of the developing world using an actor-oriented approach. The importance of Bryant and Bailey's work lies in the broader dimensions

they explored in Third World political ecology, which moved beyond the core understanding of environmental conditions in the Third World, as mainly one of the outcomes of the Third World subordination to and exploitation by the First World, to reveal the multi-layered relations between actors positioned at the local, national and global levels. This recent shift in the focus of political ecology is characterised by its particular interest in environmental conflict – bringing the *politics* into political ecology; an interest which refuses the 'division between economy and culture, the material and the symbolic, or structure and agency in social analysis' (Moore, 1996, p.127). Thus, struggles over livelihood and survival exceeds the traditional Marxist perception of struggle through the modes of production to 'contest the "truths", imaginations, and discourses through which people think and speak about and experience systems of livelihood' (Peet and Watts, 1996b, p.37), revealing conflicts over cultural meanings.

Post-structural political ecology does not dismiss Marxist political economy but is rather grounded in post-Marxist thought, which shifted towards a new understanding of societal interaction. Poststructural political ecology rejects the dichotomist approaches to structure and agency. Although post-structural political ecology does not deny the influence of social positionality on human behaviour, they reject the notion that positionality is derived from one form of collective organisation, such as the production process suggested by Marxism, or culturally-created institutions as suggested by culturalists. At the same time, post-structural political ecology does not totally agree with the actionist-theories that argue that social structures are the product of human agency (Walsh, 1998), as they still define society through structure. This new understanding is based on perceiving the society as a 'field of action [where classes] are defined more directly in terms of social action' (Peet and Watts, 1996b, p.32) instead of structurally-defined positions in the production process or cultural institutions. Such position, they argue, ignores the consciousness of individuals about their own reality and consequently their ability to resist or change it.

Post-structural political ecology, thus, leans toward a dialectical approach to understanding social action within constraining social fields. This aspect of post-structural political ecology has benefited from the work of Foucault on power in which he challenged those classical approaches to structure and agency. For Foucault, social realities are constructed through discursive practices in which power plays a significant role, as it produces hegemonic discourses. Yet, despite the ability of hegemonic power and discourse to hierarchalize, marginalize and exclude people within those constructed realities, it is still possible for the marginalized to realise their own identities, needs and demands – contradictions and oppositions– and be able to transform their own subjectivities through 'a dialectical relationship to a constraining social field that seeks to impose limits on the individual' (Walsh, 1998, p.32). This perspective allows for the understanding of societal interaction through multiple identities that exceed that of the classical Marxist definition of class within the industrial society, such as race, gender, ethnicity, kinship, faction, religion, etc. Those multiple identities unveil

the presence of multiple fields of societal interaction, creating more possibilities for the negotiation with and the transformation of constructed realities. The recognition of the importance of unveiling the multiple identities, through which individuals and groups interact, led post-structural political ecology into adopting an anthropological ethnographic perspective, to develop a better understanding of local societies as heterogeneous rather than homogeneous political constructs through which socio-environmental conflict is animated (e.g. Moore, 1996).

Post-structural political ecology places great emphasis on the critical understanding of historical transformations to understand the complexity of socio-environmental conflict. In his analysis of environmental struggles in post-colonial Zimbabwe, Moore (1996) argues that a historical perspective reveals the numerous struggles over 'cultural categories through which access to critical environmental resources are contested' (p.129). He also highlights the importance of the influence of historical transformations in terms of social relations of production and state policy during the colonial period on the socio-environmental conflict over resources in the post-independence era. Post-structural political ecology's critical approach to history can also be attributed to the work of Foucault on historical analysis, which rejected the use of history as straightforward historical information or a contextual setting where the past inevitably leads up to the present (Mills, 2003). For Foucault, the complexity of the present could not be understood without first exploring the dynamics of power relations and their role in processes of change in the past. By the same token, the environment for post-structural political ecologists is a social construct constantly changing through historical transformations of society and political economy as well as the ecology itself. This social constructivist perspective does not deny the existence of nature on its own right. However, it emphasises the importance of the history of human interaction with nature; 'the understanding of nature is precisely one of acting upon "nature" so that it can never be the same from one moment to the next' (Bird, 1987, p.257).

Due to the emphasis that post-structural political ecology places on the critical analysis of history, it is important to shed the light on Foucault's contribution to historical analysis. The essence of his work is not only found in a post-structural political ecology approach in general, but is also referred to in Harvey's presentation of his 'moments' of social process and is further used in this thesis as its theoretical framework is developed in the following sections. In his book *The Archaeology of Knowledge* (1972), Foucault rejected 19th Century traditional approaches of to understanding history for their attempt to deal with history as long periods of 'linear successions' or 'continuities' only interrupted by short moments of 'accidents' causing change. He argues that historians over-emphasised these constructed 'continuities' through the reduction of existing contradictions, i.e. conflicts and oppositions, within historical periods in order to be able to portray history as a coherent totality, with change coming as a natural development to the underlying patterns of history. Although Foucault (1972) does not seek to devalue 'continuities' within history, he argues that if it were not for the

contradictions within those 'continuities', and if it were not for the significant periods of 'discontinuities', new 'continuities'/'positivities'/'permanences' could never have emerged in history (1972). In order to achieve a critical understanding of history, Foucault adopted an epistemological approach in his work. This referred to the term 'épistèmé', which he developed, and defined as 'the total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences, and possibly formalised systems' (1972, p.211). Thus, processes of change for post-structural political ecology cannot be understood in isolation from the contexts through which they were articulated. Those might involve hegemonic forms of knowledge which bring about specific changes, 'discontinuities', as well as 'other' prevailing forms of knowledge that create 'contradictions' within certain 'permanences', without achieving universality or observable change.

I.2 The 'moments' of social process – *Introducing Harvey's framework of social process*

In his book *Justice, Nature and the Geography of Difference*, Harvey (1996) constructs what he calls a 'dialectical cognitive map to represent the flow of social processes' (p.78). He does not claim to propose a meta-theory of social process, but rather creates an 'initial map' for its exploration. Harvey constructs this map to 'assess the form, the power, the creative possibilities as well as the limitations inherent in different theorizations' (ibid). He uses this map to examine how the understanding and valuation of the 'environment' and 'nature' evolved in the context of the processes of social change. This is used as a means to understand current environmental debates and dilemmas. However, while Harvey's objective is to make sense of the dynamics of social and environmental justice with specific reference to difference and social justice in an urbanised world, his 'map' could be utilised for examining other aspects of social life. For he argues that almost all those who wrote about social theory and change have touched upon all the 'moments' of his proposed map even when they tended to appeal to 'a particular structure of 'permanencies' (elements) that transfix relations between the various 'moments' to give a structured order of society' (ibid, p.92).

'Social process' is used in the context of this thesis to replace traditional sociologists' approaches which relied on 'social structure' in the study of society and its transformations. Social structure is defined by Walsh (1998) as 'the term that sociology uses to capture and describe the organisation of [...] the various patterns of social relationships that emerge and develop between its [the society's] members' (p.8). In practice, the study of social structures has often been confronted with two problems: first, the analysis of 'society' as independent from its environment; and second, the assumption that it is possible to describe society's past and present through a particular pattern of development. Those two assumptions are challenged by post-structural political ecology and are questioned in the course of this thesis. Thus, the term, 'social process', is used in this thesis to study society, conflict and change. It refers to the ongoing dialectical relation between the members of society, and between them and its various social constructs including: the environment within which

they exist; the "luggage" of the past, which inhibits their present but not necessarily leads it; and the inherent contradictions, from which the transformations within and between those relations tend to emerge. The definition rejects the timeless, homogenous images of the community, and embraces the concept of society as a 'political association formed through processes of political and cultural creation and imagination – the generation of meaning in contexts of unequal power' (Roseberry, cited in Li, 1996, p.509).

Harvey (1996) defines six distinctive 'moments' that represent the flow of social processes: Language/discourse, power, beliefs/values/desires, institution building, material practices, and social relations. He uses the term 'moments' to avoid any prior sense of 'crystallisation' of those 'processual activities' into 'permanences' (ibid). While he does not deny that flows could crystallize into 'things' or 'systems', he insists that in order to understand 'permanences' such as power structures we need to understand the 'fluid processes that constitute them' (ibid, p.82). Although Harvey insists that none of those 'moments' has a specific significance over the others, discourse seems to occupy a considerable space in his discussion of the social process. This is not to over-emphasise the role of discourse as a 'moment' of social process, but as a communicative 'moment', which could contribute to the exploration of the other 'moments' within the framework. Harvey argues that the 'moments' of social process have dialectical relations with each other, which recognises the possibility of any 'moment' influencing any of the others within the framework.

Harvey's approach is criticised by Jones (1999) for being eclectic and reductionist. He argues that Harvey is trying to bridge the rift between an 'increasing post-modern human geography and Harvey's brand of 'post-Marxism' ' (pp. 530-1) using dialectical thought. Jones (1999) finds the approach confining and quite set in the meta-theorist approach of conventional modern thought. In his attempt to engage in the post-modern turn, Jones (1999) cautions that Harvey is approaching a dangerous zone, as he attempts to reinsert 'some notion of universality amongst [an] eclectic array of concepts' (p.539). Furthermore, Jones criticises Harvey's fixation with the 'old' concepts such as 'class', 'capital' and 'labour', and brings the attention to the multiple identities which position people differently in the social world. Jones' criticism of Harvey comes from a post-structuralist paradigm that borrows from Foucault and Derrida, which at the same time refuses the 'superstructure of Marxist theory' but believes that the spirit of Marxism is still present in any contemporary thought. While this study is not going to engage in the debate over the contradiction between the historical materialism of Marx and post-structuralism, it is important to attend to such criticism and highlight how Harvey's framework is considered flexible enough and useful for the purpose of this study.

It is important to note that criticism of Harvey's work is coming from within his discipline, human geography, which prioritises space/place in its conduct. This study, on the other hand, is situated within political ecology, which, as mentioned above, is a relatively new discipline that is still

borrowing from a wide range of disciplines including geography, anthropology and political economy. This study could be considered to have a comparative advantage of freedom and flexibility over Harvey's, who has a long history of situatedness within post-Marxist human geography. Jones' criticism of Harvey can be attributed to Harvey's status as a post-Marxist human geographer and Jones' position at a relatively extreme end of post-structuralist human geography. However, the diversity and heterogeneity of the postmodern society, which post-structuralism acknowledges and argues for, can be most observed within post-structuralist thinking. Adopting a post-structuralist perspective does not necessarily imply embracing the extreme position of someone like Baudrillard who argues that the postmodern world is 'an artificial creation in which reality disappears into a haze of images...' (Walsh, 1998, p.29). Foucault's work offers a broader approach, which emphasised the role of the political in the articulation of social realities and the production of knowledge: an ongoing process of creation, negotiation and change.

Although Foucault argues that hegemonic discourses are created by the discursive practices of the powerful, he also acknowledges that the existing contradiction could achieve different 'thresholds' towards formalisation and challenge existing established knowledge (1972). Thus, for a poststructuralist such as Foucault, his theorisation does not attempt to deny the presence of structures –including that of 'old concepts'– but rather to question their common-sense status. Harvey's 'moments' of social process, in fact, are not constrained by the straitjacket notions of Marxist political economy and can be applied in contexts other than the working class politics of the industrialised world. Not only are societies faced with multi-layered political problems mediated by dynamics more than those of, and sometimes beyond, power relations within a capitalist system, but also people themselves have multiple forms of identity within different relational networks (Healey, 1997). This thesis does agree with Jones that people have multiple forms of identity, and contends that a framework such as Harvey's 'moments' of social process will be able to reveal those multiplicities.

Harvey's 'eclecticism' falls within the same criticised eclecticism of the field of post-structural political ecology. However, neither does Harvey nor post-structural political ecology borrow blindly from different disciplines (such as geography, anthropology and sociology) or their offshoot theoretical approaches (such as post-Marxist geography, cultural ecology or political economy). Political ecologists who emerged from those various disciplines, recognise the validity of their many notions and methods and have set out to make use of them in their quest for establishing post-structural political ecology as a theoretical field of investigation. Thus, Harvey offers a flexible framework especially for scholars who acknowledge the importance of economic factors raised by Marxist political economy (Harvey, 1996; Morrison, 1995; Swingewood, 1984); the role of social relations in mediating within a certain society found in Durkheim's work (Swingewood, 1998; Morrison, 1995); the impact of institutions, such as religion, on socio-political and socio-economic organisation within

a society suggested by Weber's study of Protestantism (Walsh, 1998), and most recently the contribution of post-structuralist thought of Derrida and Foucault on the role of power and discourse in giving a 'partial representation' of the world (Jones, 1999). Harvey argues that in most major theories there is a tendency to privilege one of the 'moments' as a 'particular structure of "permanences" that transfix relations between various "moments" to give a structured order to a society" (Harvey, 1996, p.92). The problem with such an approach is that the relation between the "privileged" moment and the others tends to be perceived as a linear one-way relation, which limits the possibility to envisage the ability of the other "moments" to articulate relations between each other and affect that 'permanency'. This does not only make it impossible to investigate processes of transformation. It also could conceal the *persistence* of certain attributes of a 'permanence' despite the disappearance of that 'permanency' itself. This is because those attributes continue to be articulated through other 'moments' of the social process despite their seeming disappearance from the "privileged" moment of focus.

Contrary to Jone's (1999) criticism, Harvey rejects giving any 'moment' a universal supremacy over the others. He also shuns giving any of those 'moments' a pre-determined pattern of development. He rather stresses the need to explore *all* the 'moments' of social process in a dialectic manner, which recognises the internal relation between them. This is important, Harvey (1996) argues, in order to avoid what he calls 'monadic idealism' as '[e]rrors arise when examination of one 'moment' is held sufficient to understand the totality of social process' (p.80). This has also been a concern of Foucault who argued that it should not be assumed if one discursive formation substituted another that 'a whole world of absolutely new objects [...] emerges fully armed and fully organised in a text that will place that world once and for all' (1972, p.197). Thus, some elements could remain throughout 'several distinct positivities, their form and content remaining the same, but their formations being heterogeneous' (ibid). By adopting Harvey's moments of social process, it would be possible to investigate social process by maintaining a dialectical relation between 'permanences' and 'discontinuities', structure and agency, and the physical and the constructed.

Although, this study departs form a post-structuralist approach that 'focuses on the role of language in the constitution of social reality' and the role of discourse in the 'articulation of knowledge and power' [...] 'through which social reality inevitable comes to being' (Escobar, 1996, p.46), it maintains a 'contextualist' position, which draws from Foucault's epistemological approach to understanding historical transformations and the present, and which does not deny the presence of a reality 'out there' (Hannigan, 1996). Indeed, critics of post-structural political ecology argue that its epistemological approach could lead to relativism in its explanation, which dilutes any possibility for a theorisation of environmental problems. However, post-structural political ecology does not aim at achieving a mega-theory to address all environmental problems at a global level, as that would lead to the same pitfalls of modern development theories. It rather aims at developing a theoretical method

to understand environmental conflicts beyond the conventional understanding of conflict over access to and control of natural resources. The epistemic approach of this thesis would investigate prevailing realities 'out there' - those 'permanences' and structures, would investigate the diverse subjective perceptions of those 'realities' and would ultimately reveal the processes through which they were constructed. Such an approach would investigate the dialectic articulation of the 'moments' of social process to unveil the 'discontinuities' within those constructed totalities, the presence of contradiction and the role of agency in resistance, and consequently understanding transformations and their effectiveness within the social process.

Harvey's framework of the 'moments of social process' proposes multiple entry points to investigating socio-environmental conflict in a society, which is characterised by heterogeneity, where different groups have different perception of their own –and the 'others' lives–at both the materialistic and symbolic level. Having a contextualist position implies investigating 'realities that are out there', the physical, structure and 'permanences' *vis-à-vis* the epistemic 'discontinuities' that emerge from the contradictions of heterogeneous perceptions and constructs; i.e. conflict. It is possible to envisage the 'moments' of social process and a multi- and inter-dimensional binocular, which as we slide across what is conceived as a linear timeline, we could reveal the kaleidoscope of the complex history of socio-environmental change. In some instants, the binocular could reveal 'permanences' and structures, but it is also able to reveal how one 'moment' or more reflects the presence of multiplicities and contradictions, giving way to agency to take place and consequently 'discontinuities' to emerge.

I.3 Property rights systems of common pool resources – *clarifying the terminology*

This research focuses on natural resources property right systems (PRS) and in particular on water, which the thesis will refer to as common pool resources. Thus, it is important to establish some basic definitions for the terminology used in this context: property, rights, property right systems and common pool resources. This is only to minimise the probability of misunderstanding the terminology used in this thesis, given that the impact of the confusion of definitions on choice of preferred property rights system is not uncommon to the debate. It is important to highlight that those are operational definitions and, as such they still do not offer a definition of property right systems as suggested by the argument proposed above, which will be taken up further in this chapter. The following definitions are more likely to be found in the realms of environmental economics and the institutional approach to PRS. Thus, the definitions below reveal their tendency towards ecological-economic determinism towards the understanding of PRS, which lead to clearly-set institutional mechanisms for the management of natural resources. Those definitions fall into the trap of 'monadic idealism', which Harvey criticised, that is using one 'moment' to understand and define the various types of PRS as a totality. Thus, the definitions provided below should be dealt with in

the awareness that they do internalise the underlying principles of the disciplines, which constructed them.

Bromley (1991) argues that property is '*not* an object but rather is a social relation that defines the property holder with respect to something of value against all others' (p.2). He also defines rights as a *relationship* not between an *individual* and *an object* but rather between *an individual* and *other individuals* '*with respect to that object*' (p.15, italics added). Although helpful, and seeming to recognise the social dimension of PRS, these definitions are based on the fact that property rights are clearly established institutional arrangements, with clearly set mechanisms. Those institutional arrangements could be private, public or *common* property rights systems. If anything, the body of literature developed about the institutional dimension of *common* PRS has helped to set it side by side with other property rights systems and distinguish it from 'open access' situations, attributed to Hardin's (1968) Tragedy-of-the-commons. Property rights systems, regardless of their type, are regarded not only as mechanisms to control the use and appropriation of the environment but also people's behaviour towards each other throughout use and appropriation (Hanna *et. al.*, 1996).

The reference to water as a common pool resource is important because it refers to the complexity of its nature and consequently the complexity of the arrangements for access to and control over water resources, especially under conditions of scarcity. 'Common pool resources' should not be confused with 'common property resources'. 'Common pool resource' is a term used to refer to the physical nature of the resource, and it does not suggest any form of property rights or arrangement for access to/or control of the resource. It refers to natural resources that are difficult to define within a certain boundary, such as water, air, atmosphere, ozone shield, the seas, fisheries, etc. The nonstationary nature of such resources makes the establishment of any form of property rights for them specifically difficult (Costanza and Folke, 1996; Ostrom, 1990). While it is widely assumed that all 'common pool resources' are held within 'common property regimes' or even 'open access' situations, this is not entirely the case. The varied forms, which water can be found under in nature, allow it to be held through different property rights systems within the same society in the same area. While tube water wells could be privately held, running streams could be managed as common property, and water pumped from state appropriated underground aquifers could be managed as a public property.

Common property resources are resources over which a certain group exerts collective control through a common property regime (CPR). In this case, the group has a common right to those resources, as well as duties towards them and towards the group. Members of the group are supposed to have an agreement on the rules applied for the allocation and distribution of those resources among them. Indeed, as there is no single form of decision-making characterising such systems, rules can also be defined by a small group of individuals within the group or even only by the leader. The sophistication of such regimes varies from one society to another and from one resource to another.

Groups commonly managing a resource could devise incentives for compliance and punishment for non-compliance and they could also develop systems for monitoring and resolving conflict (Ostrom, 1990). Not only do common property rights prescribe who has rights to the resources but also terms of exclusion. The presence of clear 'institutional arrangements' and mechanisms for managing the resource helps to distinguish them from 'open access' where everybody has access to the resource and nobody can be excluded.

However, this does not deny the fact that the line between 'common property regimes' and 'open access regimes' is sometimes ambiguous. Whilst access to water as a common property right might be easily perceived in the case of rivers, streams and run off water, underground water tables are harder to be recognised as such. Particularly when separate individuals or groups extract water simultaneously from more than one area within the same basin, the water table could be subjected to a 'giant' open access situation. Furthermore, due to their nature and complexity, the introduction of change in property rights of common pool resources is, in many cases, characterised by the growing control of the state rather than the privatisation of those resources. Even in those cases in which a form of private property system is applied to certain common pool resources, such as the exploitation of underground water through digging wells, some form of state regulation still prevails.

When a resource is managed as public property or under a state's property regime, the state has ownership and control over it. This could be done directly by the state through a ministry or indirectly through a state agency (Bromley, 1991). Water as a strategic national resource is in many cases managed under a centralised state regime. However, the state could lease one or more forms of the resource to a group or individuals who are given usufruct rights for a certain period of time. For example, a state could give a certain mining company the usufruct rights over surface water resources in the area of mining. It could also allow manufacturing industries to dig tube wells within their plants to extract water for manufacturing purposes. Under such system the state has the right to decide who can have such rights, how much water can be extracted and for how long. The state would have the right to monitor the use of the resource, punish non-compliance, and withdraw the rights under jurisdiction of the resource use laws and regulations. The effectiveness of state control over resources does not necessarily cover all these responsibilities and forms of public property rights do vary from one state to another and from one resource to another.

In a private property system, an individual or a corporation would have ownership rights over a certain resource. Sometimes those rights could be constrained by laws of use set by the state to protect strategic interests and those of non-owners. In such a system an individual or a corporation decides according to their interests how to use the resource, how much and for what. It is also left to the private owners' discretion to decide whether to sell or lease those rights to another party. Indeed, a CPR could be considered a private property for a group of collective owners. If a group were given usufruct right by the state then the group would be managing the resources as a CPR. Although they

would be under the confinements of the rules and regulation of use set by the state (or the leasing party), they would still have some autonomy over the allocation and distribution of such resources within the group. Thus, although the above discussion attempted to draw the lines between the different property rights systems; in reality they tend to overlap and are difficult to define.

The above definitions use a single dimension to differentiate one system from the other: that is 'who makes decisions'. Not only that is a limited definition, but the process of decision-making is also used in a limited manner. While the above definitions served as an introductory clarification of terminology, they are inadequate to fulfil the objectives of this thesis. They deal with property rights systems only as institutional arrangements with clearly set mechanisms. The definitions themselves assume that the systems are unchangeable. Furthermore, they do not question the process that led to each form of institutional arrangement *per se* and overlook the role of the dialectic relation of the 'moments' of social process in the *shaping of* and *negotiation with* those systems. The following section takes property rights systems beyond the confinements of operational definitions and situates them within the discussion of the 'moments' of social process. Although different PRS are primarily and easily differentiated by the main principle of being commonly-, privately-, or publicly-held, their underlying premises and their embeddedness within broader social process are more profoundly revealed through the articulation of the dialectic relation between the 'moments' of social process.

I.4 Property rights systems – *from managing mechanisms to social processes*

Economists and environmental economists studied different property rights as institutional arrangements –and mostly as *economic* institutional arrangements (e.g. Keohane and Ostrom, 1995; Ostrom 1990; Bromley, 1991, among others). While environmental economists applied economic and/or administrative principles in comparing different forms of property rights and potentials of success, such as weighing private benefits to social costs (e.g. Bromley, 1991), institutionalists tended to stress the appropriateness of scale, rules, incentives and monitoring mechanisms (e.g. Ostrom, 1990) using in most cases game theories to support their arguments. Such approaches demonstrated 'the economic rationality of co-operation and the possibility of co-operative equilibrium outcomes from competitive games' (Mosse, 1997a, p.469). Even when discussing common property rights systems with reference to the importance of cultural and social relations within such a system, those discussions still over-emphasised the role of individually calculated rationalism within those relations over-looking their complex dimensions and dynamics.

On the other hand, it is only through the study of common property rights systems within the anthropologically popular 'traditional/indigenous' societies that property rights systems have been examined from a socio-cultural perspective, by cultural and environmental anthropologists such as Goldman (1998a), Discola and Pálsson (1996) and The Ecologist (1993). These perspectives have generally been limited by the romantic notion of nature-benign and homogenous societies. They

emphasise the role of traditional values and moral codes in 'generating and preserving co-operative resources management' (Mosse, 1997a, p.469), over-looking the complexity of social relations within 'traditional' societies. While this thesis does not deny the institutional and cultural nature of PRS, it argues that they are actually embedded in social processes and they embody all aspects of those processes. Consequently, there is a need to examine *all* forms of property rights systems as a social process especially as this thesis is concerned with the *change* from one system to another, or within those systems, and its impact on the dynamics of social process and socio-environmental conflict.

The importance of examining *all* property rights systems as social processes lies in four main reasons. First, resource use and management is not always carried out by clearly set PRS. It is sometimes embedded within social process that the society itself would not be aware of as an explicit 'system' and one has to probe deeply within such a society to understand how exactly it is that the resource is managed. Second, even if PRS are clearly set and defined, they are products of visible or subtle negotiation processes, that are also embedded within the social process, leading to the 'choice' of a certain property rights system. In such cases, it is more beneficial to examine the way the resource is accessed and controlled by examining its articulation within the 'moments' of social process. Third, even clearly set property rights systems are subject to ongoing transformation, which is not usually manifested in the explicit change of the prevailing PRS. Sometimes individuals and groups could gain access to and/or control of those resources despite the declared rights and duties or rules and regulations. This could be achieved through the changing dynamics of the social process itself, rather than the 'institutional arrangements' of a certain property rights system. And finally, while a socio-environmental conflict could be a conflict over access to and control over environmental resources, it could also be a conflict over the choice or definition of the property right system itself. Such conflicts are not always observable and are mostly embedded within the 'moments' of social process. Only through the examination of those moments it could be possible to reach a clearer characterization of the dynamics of such conflict.

The above arguments emphasise the inadequacy of studying PRS as resource management mechanisms only because such a perspective conceals the social, political and historical constructions of property rights systems. The 'moments' of social process could contribute to the understanding of different PRS at two different levels: the theoretical and the epistemic. At the theoretical level, the moments of social process can offer a broader definition of PRS in the history of environmental debate: private, public and common, as 'permanences'; each with its underlying discourse and its dialectic articulation with the different 'moments' of social process. At the 'epistemic' level, exploring the 'moments' of social process could reveal how certain 'moments' reinforce such systems, while others perpetuate opposition, contradictions and 'discontinuities' within those 'permanences'; thus, revealing processes of their construction, transformation and manipulation. The remainder of this chapter is dedicated to introducing the 'moments' of social process, and their articulation in PRS at

the 'epistemic' level in the broader context of socio-environmental conflict, while Chapter Two will elaborate on the definition of the different PRS, as permanences, highlighting the fundamental differences between each system as historical constructs within the environmental debate.

I.5 Property rights systems as social process - *situating property rights systems within Harvey's 'moments' of social process*

Most of the arguments for social constructivism in the environmental debate tend to look at how certain environmental phenomena become defined as problems (Hannigan 1996; Hajer, 1995; Bird, 1987). However, little has been done to explore conflict over natural resources as a social phenomenon within the changing contexts of property rights systems. Debates over property rights systems have focused on issues of failure and success, searching for *the formula* that would insure the 'success' and continuity of those systems. Three problems arise from such an approach. First, the problem of defining success: who defines success and what are the underlying principles of such definition? 'Rule conformity is often mistakenly identified as the principle indicator of institutional success or efficiency' (Mosse, 1997a, p.483) which is mostly taken 'independent of factors such as productivity or equity' (ibid). Considering the heterogeneity of society and the multiple identities of individuals within the same society, it is quite impossible to argue for one definition of success.

The second problem lies in the concept of continuity or permanency. If a certain property rights system establishes who has the right to access a resource and who controls it, this does not imply that the terms of accessibility and control are rigid and are not subject to some sort of change, even if it is not observable. Finally, and most importantly, how is it that a property rights system has been reached? What are the social processes and flows that lead to the occurrence of such a permanence? And does any moment within such process operate in a way to undermine or limit such 'permanence'? Furthermore, where does socio-environmental conflict lie, how is it manifested and what does it manifest in such contexts. This section will attend to these questions as it situates property rights systems within the 'moments' of social process. It is important to note that the moments of social process are presented and discussed without any order of significance and their discussion is sometimes interlinked because of the internal dialectical relation between them.

Harvey (1996) roughly defines language/discourse as the moment in which we use 'the vast panoply of coded ways available to us for talking about, writing and representing the world' (p.78). Discourse is a discursive moment and its importance lies in the fact 'it is a moment of communicative persuasion and discussion *between persons* regarding certain lines of action and belief' (p.82). The significance of discourse for PRS as social process lies in at least three facets. First, the deliberate use of discourse to influence the process of decision-making and choice of property rights system; second, the role of dominant discourse and the ideologies it embodies in the construction of PRS and third, the role of discourse as a discursive practice to gain access to and/or control over resources

regardless of the prevailing system. Indeed, these facets are not the only facets of discourse within the social process. This is only to elaborate on how discourse is *directly* significant to PRS as a social process.

The choice of property rights system to be employed for managing a certain natural resource varies from one society to another according to the ideologies and basic principles of those in control of decision-making within that society (Emel, *et al.*, 1993). Discourse embodies the ideologies on which the choice of PRS is based. Barnes and Duncan argue that discourse embraces 'particular combinations of narratives, concepts, ideologies and signifying practices, each relevant to a particular realm of social action' (cited in Peet and Watts, 1996b, p.14) –in this case a certain arrangement for the management of property rights. In some cases, for a certain property right system to be chosen, certain groups rally for that system. From a social constructivist perspective language/discourse is recognised as a deliberately chosen tool to persuade others about the nature of the problem and its potential solution (Hannigan, 1996). When discourse is deliberately employed to persuade, rhetorical strategies, such as images and metaphors are used for that purpose. Skilled discourse users tend to utilise a rhetorical style –religious, scientific, legalistic, etc.- that is most appropriate and persuasive within the context in question. The style is chosen to appeal to the most seemingly prevailing social institutions and the strongest sentiments within the context in which they are attempting to constitute or change the property rights system. Thus, assimilating the discourse of the 'masses', using their values, fantasies and beliefs to advocate a certain choice.

For post-structuralists, discourse takes a more substantial role in social life. For an extreme post-modernist such as Baudrillard, 'the whole world is nothing other than a text' (Harvey, 1996, p.87). However, this thesis argues that a specific discourse embodies a situated positionality in regard to the world. From this point of view, a certain discourse would embody an ideology, a specific understanding of the world. And if a certain discourse is dominant it could dictate most or *all* aspects of social life, including how a natural resource is to be managed. So the second facet of the significance of discourse to PRS as social process is the role of dominant discourse in the creation, embodiment, reflection, and 'continuation' of a certain property rights system. It is argued that the 'moment' of discourse is indistinguishable from the exercise of power (Foucault, cited in Harvey, 1996). Any issue could be subject to various discourses by different users. However, due to the control of certain groups over channels of communication, the skill of discourse-makers in certain historical, cultural and political contexts, and/or their situated position within the power structures of their context, one discourse would gain more legitimacy and dominance than the others (Bryant and Bailey, 1997; Wilson and Bryant, 1997; Hannigan, 1996) and consequently dictate the property rights system employed to manage a certain environmental resource (Emel *et al*, 1993).

The role of dominant discourse is not limited to the determination of the prevailing property rights system for managing environmental resources in specific contexts. The dominance of scientific discourse, characteristic of the Enlightenment project, marks the call for the 'enclosure of the commons' and the emergence of private property systems, for example. Modern scientific discourse adopted a Malthusian perspective on the relation between society and the environment; which rejected the possibility of cooperation and endorsed competition as the only way to prevent the over-exploitation of natural resources. Each property rights system internalises certain discourse and views on the society/nature relation. This notion of discourse in relation to different PRS is discussed elaborately in the next chapter where the six 'moments' of social process are used to define each property right system as permanences. But while this explains how specific PRS are expressions and reinforcements of the dominant discourses on 'how life should be', it is also important to be aware of the deliberate use of discourse in less observable processes of constructing an 'apparent' consensus of how a certain natural resource is to be managed, who has access to it and who has control over it.

A third facet is where the significance of discourse within the social process in the context of PRS discussion refers to the *absence* of a clearly set property rights system. In the absence of agreed rules and principles for managing water resources within a certain context, individuals and groups would employ discursive strategies and practices to assert their own rights to water resources. Discourse in such cases is employed to legitimise claims. As discourse internalises power structures, legitimacy of a claim could be gained through the 'influence of power relations' on those in weaker positions, without an actual observable exercise of power (Wrong, 1967). The 'moment' of power is discussed more elaborately later in this section. However, it is important to note that just by the positionality of a person or group within a certain context, their discourse would gain 'legitimacy' and consequently they acquire rights to access and/or control of water resources. Nonetheless, beside the risks of the absence of agreed rules and principles for access to and control of water resources, such situations offer an 'arena of opportunity' (Li, 1996, p.513), even for those in weaker positions to gain access to resources, even if not control them. The presence of a dominant discourse does not negate the fact that multiple discourses that 'vary among what are often competing, even conflicting, cultural, racial, gender, class, regional and other differing interests' (Peet and Watts, 1996b, p.14) do coexist 'uneasily' with the dominant 'discursive formation'.

It is important to differentiate 'access to' from 'control of' in the context of water as common pool resource. Rights to access are rights at the operational level. Through such rights a person or a group would have a right to use a certain amount of water during a certain period of time. On the other hand, rights to control implies that a person or a group have a say in the decisions made regarding the management of water resources and rules of exclusion and alienation. Schlager and Ostrom (1992) call those collective choice level rights (1992). Accordingly, 'owners' of different discourses, borrowing from their past, present other sources of discourses or on the basis of their current living

conditions, can legitimise and justify their actions through which they gain access to water resources, which might be considered 'illegal' according to the prevailing practices. According to Scott (1985) such practices express a form of *everyday* resistance, which subordinate classes revert to as they lack the access to more open or organised form of political activity. Although such forms of struggles fall short of being considered 'outright collective defiance' (ibid, p.29), post-structural political ecologists consider them to be a form of social movement (e.g. Bryant and Bailey 1997, Peet and Watts 1996b). Such forms of 'social movements' are sometimes successful in accessing needed resources, but they do not guarantee access on a regular basis and would not necessarily imply change in the 'collective choice level rights'. Nonetheless, it is still possible that over time, the continuous 'illegal' access to water resources could become institutionalised. This facet of discourse within social process could appear in the absence or the presence of clearly set property rights systems.

There are many examples that highlight the role of discourse in natural resources claims-making processes. In South Africa, communities surrounding the government-owned *Makambati* reserve were not allowed to hunt game in the reserve. However, groups of young men with the encouragement of their local chief, hinging on his current relation with local authorities, would regularly hunt in the reserve. The young men justified their actions by their customary rights to hunt in the area. They used historical rhetoric to legitimise poaching within the reserve (Leach *et al.*, 1999). While this example demonstrates the use of 'past' claims to legitimise illegal actions, a case in Indonesia demonstrates how new meanings based on modern constructs can be employed to de-legitimise the rights of the 'other' to certain natural resources. In the Case of Lauje property claims in Central Sulawesi in Indonesia, the coastal élite tried to disclaim mountaineers' right to the hill lands by arguing that they lack recognisable signs of 'community', which international aid agencies usually seek when creating cooperative organisations for management of land resources. The argument was based on the élite's own conceptions of living and practicing standards, such as claiming that the land is empty and is not utilised, when the reality is that the hill dwellers do utilise the land but only once a year. Although the mountaineers have traditional 'pioneer' right to the land they felled, their practices were discredited because they were not registered within the formal state-recognised tax system (Li, 1996). This also highlights the multiplicities that are present within communities that are perceived as a homogeneous unit.

Contemporary debate over issues of PRS is becoming more political in nature. It is increasingly argued that control over 'the environment' is a power issue and needs to be analysed as a matter strongly related to unequal power relations (Bryant and Bailey, 1997). One of the most important contributions of post-structuralism to social theory is the specific attention, which Foucault gave to 'power relations and institutional contexts of social interaction' (Gare, 1995, p.66) Through his historical study of various discursive formations Foucault demonstrated 'how discipline and power in modern society segregate, differentiate, hierarchalize, marginalize and exclude people in it' (Walsh,

1998, p.31). Not only do power relations dictate PRS, but also, PRS internalise those power relations and reinforce them, recreating those hierarchies and forms of marginalisation and exclusion. Feminist theory and practice have embraced the post-structuralist approach into this position in dealing 'with the problematic issues of knowledge, power, representation and authority' (Schrijves, 1995). Eco-feminist writings focused on 'how power relations within the household influence the control of land, natural resources, labour and capital (Bryant and Bailey, 1997, p.14). Feminists have contributed to shedding light on the misconception of the household 'as a unit on congruent interests, among whose members the benefits of available resources are shared equitably irrespective of gender' (Zwarteveen, 1997, p.1336). Early feminist theory was criticised for focusing on power relations' influence on white women's perspective on access to and control of resources at the household and the community level (Schrijves, 1995). Gradually gender studies embraced issues of ethnicity, race, class, culture and age as they cross cut through gender. In the context of access to and control of water resources, researchers need to be aware that while an individual's identity could be powerful at one level, another facet of his or her identity could weaken them at another. The question remains: how does power as a 'moment' operate within the social process of change?

In his seminal piece of work *Power: A Radical View*, Lukes (1974) argues that power is three-dimensional. He criticise Dahl's (1957) definition of the concept of power as being one-dimensional. Dahl's definition focuses on the actual exercise of power and ignores the issue of potential power or capacity. Dahl's approach implies that by 'identifying 'who prevails in decision-making' seems 'the best way to determine which individuals and groups have 'more' power in social life' (Polsby, cited in Lukes, 1974, p. 235). Although Dahl examines his concept of power within the American 'pluralist' society, where power is supposed to be distributed equally, the exercise of power of this dimension could be examined in contexts of highly unbalanced power relations, as in the 'elitist' approach. This situation occurs frequently when a group or an individual is in an advantaged position within a certain community or nation where they could influence the process of decision-making in regard to issues affecting them. In some authoritarian states, those in strong positions within the government, the ruling family or the society could influence a decision regarding any issue of concern to the whole nation, including PRS. Such power is also demonstrated in situations where a new property rights system is introduced by an 'external' agency – national or international aid agency – to a certain context without the prior consultation with inhabitants of those contexts.

Although such a form of power does exist, it does not necessarily work independently from other forms of power specifically in issues of access to and control over water resources. Lukes criticises Dahl's concept because it focuses 'on *behaviour* in the making of *decisions* on *issues* over which there is an observable *conflict* of (subjective) *interests*' (1974, p.236, italics and brackets by author). Bachrach and Baratz (1962) criticised the one-dimensional pluralist and élitist concept of power, primarily, for focusing on the *exercise* of power rather than *sources* of power. Their criticism, however, was centred

on the exercise of power 'by confining the scope of decision-making to relatively 'safe' issues' (pp. 86 –87). Bachrach and Baratz's (1962) criticism of such approaches lies in their belief that 'in every human institution there is an ordered system of power, a 'power structure' which is an integral part and the mirror image of that organisation' (p.85). However, they believe that those structures are not stable over time. Thus, the second face or (dimension) of the *conscious* or *unconscious* exercise of power is when 'A devotes his energies to creating or reinforcing social and political values and institutional practices that limit the scope of the political process to public consideration of only those issues which are comparatively innocuous to A' (ibid, p.87).

In the second face of power, Bachrach and Baratz (1962) bring the attention to what they call 'the mobilisation of bias': the process of limiting 'decision-making to relatively non-controversial matters, by influencing community values and political procedures and rituals' (p.88) and by trying to reinforce 'dominant values and political myths, rituals, and institutions which tend to favour the vested interests of one or more groups, relative to others' (ibid, p.89). This brings the attention to the moment of 'institutional building'. If a certain formal or informal institution favours one gender, ethnicity, race, etc. over the others in their position within a certain context or specifically in their rights to certain resources, then those who are advantaging from those institutions whether in term of power, material benefits, achieving their fantasies, values or interests, etc. will try to reinforce such institutions in a way that blocks issues threatening such benefits from coming to public consideration. Discourse in such situations could play a substantial role. Lukes (1974) argues that although Bachrach and Baratz have added a crucial dimension to the study of power, that is identifying *'potential issues* which nondecision-making prevents from being actual' (p.239, italics by authors), their framework is still lacking because they stress on *observable conflict* overlooking the issue of *latent conflict.* Latent conflict 'consists in a contradiction between the interests between those exercising power and the real *interests* of those they exclude. These latter may not express or even be conscious of their interests, but [...] the identification of those interests ultimately always rests on the empirically supportable and refutable hypotheses' (Lukes, 1974, p. 242).

Bachrach and Baratz' (1963) focus on observable conflict led to their categorisation of 'forms of successful control' in which they separate one form of power – securing compliance through the threat of sanctions – from all other forms of power and categorising them as 'other related concepts' (Bachrach and Baratz, 1963, p. 103). Lukes (1974) re-categorised the typology of *power* distinguishing when it is considered an exercise of power and when it is not on the basis the presence of conflict whether observable or latent. Lukes' (1974) typology of power includes five forms: *Coercion, influence, authority, force* and *manipulation.* Those forms of power can be divided into two main categories: one that involves achieving compliance through observable conflict and another that involves achieving compliance or goal within latent conflict. The first category includes *Coercion, authority* and *force* and the second category includes *influence* and *manipulation.* Lukes used the term *coercion* to refer to those cases

where compliance is ensured by the threat of deprivation of certain privileges or through incentives to gain privileges. *Coercion* could be used by the powerful to rally support to a certain property rights system or in setting up rules of access to and control of resources, as those in weaker position are coerced into supporting those systems or rules because of threat of loss of material or symbolic privileges granted to them by their association with the powerful. Although conflict of interests could be observable in this context, *coercion* could be practiced in covert manner.

A*uthority* is exercised in situations when compliance is achieved because the command is considered reasonable in terms of values of those who are expected to comply (Lukes, 1974). Even when a command is considered reasonable this does not always mean that it is compatible with the interests of those who are complying with them: only then the practice of *authority* is considered an exercise of power. Suppose that in a certain context the amount and flow of irrigation water is being rationalised according to a certain timetable. If the amount of water is enough for the crop size of a certain female farmer and the scheduled time is compatible with her reproductive practices, then this situation of exercising authority is not an exercise of power. However, if it is not compatible with her productive and/or reproductive practices, yet she accepts it because she finds it a reasonable practice under the circumstances, *authority* then becomes an exercise of power. Unlike exercise of *coercion* and *authority*, achieving compliance through *force* is only exercised in overt observable conflict contexts. The exercise of *force*, to impose rules of access to and control over natural resources and to insure compliance to them, is mostly practiced through what Althusser terms 'repressive state apparatuses' such as the legal system, the army or the police (1984), in which case one is stripped of the choice between compliance and non-compliance (Lukes, 1974).

In the second category, *influence* and *manipulation* are exercised in the context of latent conflicts. In this case, power might operate within other 'moments' of social process, in which case it becomes more difficult to unveil issues of access to and control over resources using the 'moment' of power as an entry point. For example, in societies where there is an institutionalised gender-biased power relations, women, even when given the choice, would still give up their rights to resources such as land or water to their male relatives against their own interest because of their fear of what *might* be the reaction of those relatives if they acted otherwise. It might be easier to observe such act of *influence* than that of *manipulation* when the complier is not even aware of an act of demand is being enforced on him/her. This specifically occurs when power is exercised through influencing, shaping and determining the very wants of individuals (ibid). The 'moment' of discourse in such situations could be employed as a 'mode of formation of beliefs and desires' (Harvey, 1996, p.83). Lukes (1974) calls that 'thought control' and refers to control of information, through media and through the process of socialisation as means to achieve such goals.

The various facets of power can be used to achieve: the power to affect things positively by getting things done, the power to ensure that certain decisions are *not* taken – kept off the agenda - or the power to change the nature of the decisions to be taken – discursive practices. Almost all scholars studying property rights systems, especially those focusing on common property regimes or the 'return' to them, although not necessarily defending them (Leach *et al.*, 1999; Mosse, 1997a and 1997b; Zwarteveen, 1997; Li, 1996), argue in some form or another that PRS are embedded within power and social relations created, maintained and recreated by a range of factors that involved one or more of Harvey's (1996) 'moments' of social process. However, although Lukes approach in defining the dimensions of power is useful to understanding issues of access to and control over natural resources, it is still situated in a structuralist tendency which overlooks the possibility to overcome power structures and the role of agency in changing realities enforced by those structures.

One of Foucault's most important contributions to the structure/agency debate is his move from the notion of power as 'the repression of the powerless by the powerful to an examination of the way that power operates within everyday relations between people and institutions' (Mills, 2003, p.33). Rather than perceiving power as a one-way relation between the oppressor and the oppressed, Foucault argued that power is a system of relations spread within the society and individuals are not recipients of power but rather a 'place where power is enacted and a place where it is resisted' (ibid, p.35). Thus, power is also perceived as something which triggers resistance and action where people criticise their own life conditions and attempt to negotiate and change those conditions through what he calls local forms of power –'local struggle'. To Foucault neither is conformity achieved by the exercise of repression alone, nor does change or discontinuity emerge through overt resistance of power only. That is why treating all the 'moments' of social process as possible entry points to understand 'permanences' and 'discontinuities' is important to the study of the dynamics of socio-environmental conflict in the changing contexts of common pool resources.

The 'moment' of institution building has been central to the discussion of PRS. On one level, PRS have been studied as 'formal' institutions for the management of natural resources, dealing with questions of scale, rules, incentives and monitoring mechanisms. On another level, there is a growing attention being given to the role of 'informal' institutions to the articulation of access to and control over natural resources. Harvey (1996) defines 'institutional building' as 'the organisation of political and social relations between individuals on a more or less durable basis' (p.79). The term 'formal institutions' is used in this thesis to refer to the 'seemingly permanent social institutions (such as those of law, the state, politics, science, education, religion, the academy, the professions, the military, and the market place)' (ibid). Some PRS can be formally institutionalised through law and the state, which usually exercise the power of *authority* to ensure compliance. That is only one and sometimes limited dimension to understanding PRS. Harvey asserts that institutions go beyond those formal ones to include 'Human thoughts and desires [which] can become collectively manifest and reified as

cultural rituals' (Harvey, 1996, p.79), such as traditions, myths, codes of practices, kinship, etc. Power relations are also embedded in all those institutions, which explain why sometimes it takes more than an individual act to sustain or override such institutions.

Formal institutions, which are enforced by the state or by an international aid agency, can be called external interventions. However, they remain internal to the dynamics of social process, because they are articulated through the 'moment' of social process, being shaped by them as they are drawn up and implemented by the negotiation processes, as much as they affect them. Although formal institutions set the rules of access to and control over water resources, in many cases those rules are informed by prevailing informal institutions, which internalise different facets of unequal power relations. In her discussion of gender needs and water rights, Zwarteveen (1997) gave the example of an irrigation project in Chhattis Mauja in Nepal in which the assumptions on women productive needs for water were flawed because they were based on women's actual access to water use prior to the project, which was only a reflection of prevailing unequal rules for access to and control of water resources.

Prior to development interventions and formal organisation for management of natural resources, access to and control over natural resources was embedded in social processes including multiplicities of informal institutional relations. Because of their embeddedness, those institutions have the resilience to re-shape themselves to maintain their control over resources through the new formal institutions. This is illustrated in Mosse's (1997a) study of tank irrigation in the Southern Tamil plains district of Ramnad and Sivagangai. Up to the end of the 19th century irrigation tanks were under state propriety, but were operated by social systems, integrated in the region wide warrior polity. Local, Marvar caste warrior, chiefs created territorial and political domains of authority for themselves by extending tank systems, while ensuring an upward flow of resources to political overlords. Although those systems were dismantled and replaced in the end of the 19th century by Zamindari estates which were accountable to a colonial government, this change did not lead to a transition to agrarian capitalism, but 'rather allowed the continuation of an earlier pattern of political relations and kingly rule, based on redistribution and largesse' (Mosse, 1997a, p.478). The Zamindars of Ramnad and Sivagangai 'continued to treat productive resources (land and water) as political assets to *rule* – i.e., to gift, exchange or redistribute – rather than property to *manage* for profit (ibid, p.479, Italics by author). Informal institutions have the ability to internalise the constructs of formal organisations without changing the basic premises through which they operate within the social process.

Although socially-based control over management of natural resources could serve to establish relations of dominance, they also provide fora for association, arbitration, negotiation and change. Informal institutions could become a place to exercise discursive practices and bring about change by appealing to the very basis of those institutions. Informal institutions need to be sustained by those

who are associated with them. Dissociation from those institutions could become an act of defiance and a form of resistance, which could lead to changing the rules through which those institutions operate or simply to weakening those institutions, which previously dictated social hierarchies, power relations and rules of exclusion and marginalisation within the society. Change in other 'moments' of social process, such as values, social relations or material practice could offer marginalized individuals or groups the opportunity to resist or dissociate from dominating institutions. That is why it is important not to use 'institutional building' as the only entry point to understand a totality as complex as the dynamics of socio-environmental conflict within the changing contexts of common pool resources.

For Harvey (1996) social relations describe 'the various forms of sociality human beings engage in' (p.79). 'It focuses on the way human beings relate to each other [...] as they live their lives, produce together, communicate, etc. Cooperative structures, division of labour, social hierarchies of class, race, age and gender, or differentiated individual or group access to material and symbolic activities and social power, are some issues encompassed within this moment'. Individuals are engaged in a multiplicity of social relations within which they encompass multiple social identities. Some social relations could re-enforce power structures or certain social institutions, but they also could offer a window of opportunity to change some aspects of the constructed realities of access to and control over natural resources. In cases when the set schedules and quantities for the distribution of water resources are not compatible with the needs of farmers, they employ social relations with other farmers to gain access to water at times better suiting to their daily practices or to gain access to quantities of water needed for their type of crops (Zwarteveen, 1997). A Farmer could exchange his/her turn with a neighbouring farmer or s/he could buy part of the rights of his/her neighbour because s/he does not need it all according to their crop type or size. For example, in Mogtedo irrigation system in Burkina Faso, male farmers only use their plots in the wet season. Thus, some of them lend out their irrigated plots to female farmers who would use those plots to cultivate vegetables using the irrigated system provided to the plot.

Social relations do not only operate between farmers, they could also operate between farmers and employees of water management authorities. A farmer could try to convince the authority to change the rationalising schedule. If that farmer is influential then what s/he would be practicing is an act of *coercion.* If s/he employs discourse, using rhetoric of calamity or loss to convince the authority of the necessity of changing the schedule then that would be an act of *influence.* Due to their differentiated position within social relations, some individuals might be able to change some aspects of the rules of access to water resources, while others might not because they lack access to the proper social relations. Some might attempt to create new forms of socialisation in order to ensure such gains. In Mexico, for example, men secure access to water either by bribing the water guards, or by maintaining good relationships with them by offering them drinks and food or inviting them to

restaurants reputed of being brothels (Zwarteveen, 1997). Not all farmers would revert to such practices, since it is also a value-ridden practice to which they might oppose. Indeed, female farmers would not use such practices as it could ruin their reputation.

New forms of social relations could emerge because of a conscious realisation of a group of individuals of their need to act together to change 'some thing' in their lives. Through certain social relations an individual could gain access to a resource by overriding social institutions that exclude the group s/he belongs to from resources which are of a symbolic or materialistic importance to their lives or gaining power by being part of a group. Collective action to change reality –resistance- could be the creator of a certain form of social relating that did not exist before. Nonetheless, in many cases, exclusion, marginalisation, hierarchies could be found within one or more facets of individual identity that already exists in a form of social relating, such as gender, ethnicity, age, etc. Individuals might identify themselves in one facet of identity more than another, until they realise one form of bias within the social process that highlights another facet of their identity. Sometimes, certain individuals might be playing the role of the active agent that mobilises the collective consciousness of a certain reality. However, sometimes despite the collective realisation of a situation of bias, members of a grouping of social relation might still fail to make a change because of one form or another of exercise of power; coercion, force, influence or authority. Nonetheless such cases of failure do not change the fact that although social life is socially embedded, we are all active agents in the construction of our own lives. We reflect on, consciously adhere to, or actively set out to transform our conditions of life. Social life is thus both 'socially constructed' and actively made as we live our daily lives'. (Healey, 1997, p.56)

The 'moment' of beliefs, fantasies and values is also significant to the discussion at this point. 'We all possess beliefs, fantasies, values, and desires about how the world is (ontologies), how better understandings of the world might be achieved (epistemologies), and how I/we want to 'be' in the world' (Harvey, 1996, p.79). Thus, it is not necessarily through conventional forms of identity (race, gender, class, ethnicity, and age) that individuals within a group relate to each other, but rather through shared beliefs, values and desires, which urges them to act to reinforce or change 'constructed realities'. 'Values and beliefs mobilize action, shape social identities, and condition understandings of collective interests' (Moore, 1996, p.127). It is important to note, that such values/beliefs and desires could vary in their sources – materialistic or symbolic. They might originate from a certain social institution such as religion. While in Protestantism generated materialistic values (Morrison, 1995), Hinduism and Buddhism transcended spiritual values and beliefs. In some societies religious discourse dominates and prescribes all 'moments' of social process including the assignment of the meaning to social facts and environmental resources, and consequently the institutions for managing them. However, religion also, as a construct, is not independent from social processes within which various materialistic and symbolic sources are articulated.

Values and beliefs have been central to the work of anthropologists in their study of culture. In the 1950s, culture was studied through its categorisation into two different kinds of phenomenon: the observable behavioural and the perceptual. While behavioural included everything 'people do and say and discernable patterns of activity' (Milton, 1996, pp.17 –8), perceptual involved peoples *consciousness*: 'the sum of total perceptions, assumption, values, norms, theories and any other mechanisms through which they understand experiences' (ibid, p.18). The problem with this approach was that it was dichotomist and was associated with concepts of 'social structure' and approaching structuralism. The question on the relation between behaviour and conscious, action and knowledge is very much related to that on structure and agency. Post-structural anthropology rejected the one-dimensional relation between action and knowledge and moved from the study of 'what people know and think' to 'the process by which knowledge and those thoughts are generated and sustained' (ibid, p.22). Post-structural anthropology defines culture as dialectical process through which knowledge about what is being done is continuously negotiated and re-shaped, altering in return those actions from which it was derived. Values and beliefs might be derived from the dialectic processes of interaction between members of the society and between them and their surrounding world. They might set the rules and norms according to which people's actions and practices are judged. As much as values are perceived as fixed reference structures, they are continuously negotiated and reproduced at individual and collective levels through the dynamic dialectic relation between the 'moments' of social process.

Cultural and environmental anthropologists have placed a great importance to the role of traditional values and beliefs in their advocacy for common property regimes. While this approach led to the romantic notion of the nature-benign homogenous societies, it does not negate the importance of values in reinforcing some aspects of property rights. Although values and beliefs might be held collectively and be sustained by various aspects of the social process: institutions, social and power relations, discourse or material practices, they are socially differentiated and might vary within the multiplicities of institutions, identities, and web of social and power relations within which different groups and individuals interact. Some values might be environmentally benign or encourage collective action; others might promote individualistic behaviour or the exploitation of environmental resources. As any other 'moment' of the social process, values and beliefs should be examined as a possible source for reinforcing certain 'permanences' as well as a source of contradiction from which conflict might arise and discontinuities and change might emerge. In his study of tank irrigation systems in Tamil Villages, Mosse (1998) demonstrated how value differentiation, among other things, contributed to the preservation of collective action in one ecological region despite agricultural and social change, but left it to erode in another. He argues that in the predominantly warrior caste region where collective action still prevails order, discipline, public status and honour are the main values held by the people of the area, placing great importance on the notion of unity and cooperation, which reinforces 'the strong cast authority and associated service and association' (p.496). In the area

lacking collective management of water resources, hard work comes across as a more important value, skill and individual effort is more rewarded and appreciated than public honour and status, which stems from a long history of public institutions erosion and individualistic tendencies.

As mentioned earlier, appealing to certain values and beliefs could be one of the means employed by discourse rhetorical strategies to reinforce a certain property rights system or to encourage the establishment of another. However, another important aspect, in relation to the dynamics of socio-environmental conflict in the changing contexts of common pool resources, is the role of dominant discourse in the formation and production of knowledge (discursive formations) and the de-legitimisation of certain values and belief through the exclusion of the 'other'. For Foucault this is an instance of 'exercise of power' by those in position of authority (Mills, 2002). The most common example of this process is the post-colonial modern development processes which established scientific knowledge as the only epistemologically adequate knowledge, and defined local knowledge, which is value-ridden, as non-knowledge (Nygren, 1999). The values of 'traditional' societies were dismissed as irrational because of their 'non-scientific' values and beliefs. Modern development approaches overstated the value of 'progress' and labelled non-modern lifestyle as backward. The lack of intensified utilisation of water resources was stigmatised as unawareness of the environmental capacity of their ecological contexts. This has paved the way to the introduction of new PRS, which internalised those modern values.

Institutions prescribing how a certain resource is managed are not always explicit. Emel *et al.* (1992) argue that in the case of property rights, 'neglect of socially constructed knowledge, ideology and institutions other than the market, as mediators between humans and nature and among humans themselves, represents a major deficiency in the resource management literature' (p.38). Those institutions, which actually reproduce their material conditions and social relations of production, may eventually outlive the conditions –or 'moments'– that created them (Emel *et al.*, 1992). Although, social relations are not only *of production* but all modes of social relating, they still materialise through the 'moment' of material practices. Harvey (1996) describes material practice as 'the sensuous and experiential nexus [...] from which all primary knowledge of the world ultimately derives' (p.79). Anthropologists stress the role, which practical activities have in constructing knowledge (Ingold, 1992) especially in their reference to non-capitalist societies. Indeed, this is relevant in the case of environmental resources especially those of inherently epistemological nature, such as water, which is a biological necessity as well as sustenance, and recently an economic one. In that sense, conflict is also inherently part of humans' struggle for survival – be it for sustenance needs or economic aims.

One has to be careful not to fall into an ecological or materialistic determinism. Human relation with nature is much more complicated to be described through material practices only. The internal relation between all 'moments' of the social process, discussed above, has already demonstrated the

complexity of meanings as well as practices in the creation, representation, and transformation of one aspect of that relation – property rights systems. It is important to keep in mind Hanna and Jentoft (1996) argument that 'across cultures and time, the natural world *has shaped* and *been shaped by* the way people think, act and live. Beliefs and ideology have framed the relationship between people and nature, social and economic groupings have formed human behaviour, and ecological variability has influenced style and living' (p. 35; Italics added). Knowledge about nature is thus a complex social construct. While culture assigns meanings to the elements of nature, such as water, and the interaction of human beings with them, farmers develop specific knowledge of water as they try to capture it, use it for their benefit and realise their limitations in that process. As local knowledge was constructed through symbolic and material practices, it also contributed to the construction of those practices. 'Society *leans upon* the first natural stratum, but only to erect fantastically complex (and amazingly coherent) edifice of significations which vest any and every thing with *meaning*' (Castoriadis, cited in Peet and Watts, 1996b, pp.31-2).

In their articulation within the 'moments' of social process, material practices could reflect or institutionalise hierarchical social and power relations and they could internalise and reproduce discourse and meanings, as well as values and beliefs. The Marxist political economy perspective of material practices reflects only one dimension of societal dynamics that is only through modes of production. From this perspective, individuals are locked into social and power relations that are governed by their position in the production system. Roles and positions within natural resources management systems do reinforce certain hierarchical relationships. In Mosse's (1997a) case of irrigation tanks in Tamil villages, he noted that water distribution systems were not 'a set of allocation rules, but rather a service *relationship* involving hereditary Pallar caste 'water turners' or *nīrppāccis* paid by farmers in grain or cash on a per-acre basis' (pp.484 – 5, italics by author). The 'water turner' role is, according to Mosse (1997a) part of an inferior public office, which has a historically derived state from pre-colonial caste-based agro-social relations. While the upper warrior caste of *Marvar* ruled and controlled the production processes in the village, the Pallar caste were left with the marginal public roles, including 'water turning' which was carried out in dangerous zones that were believed to attract spirits and demons at dawn and dusk, the times of opening and closing the sluices. While this example demonstrates how roles within material practices reflect and reinforce hierarchical social relations, it also reveals that those hierarchies precede the material practices, which reflect them and are articulated beyond that of the water distribution system. In fact, they are 'articulated in roles and positions at village festivals, and reproduced at certain temples' (ibid, p.484).

It is important to note that despite the symbolic hierarchy embedded within the material practice of each caste, the relation itself is interdependent. The Pallar are paid by the farmers in return for their service and the *Marvar* need the Pallar's to distribute water to them. Although the relation seems structural in the position of the Pallar *vis-à-vis* the *Marvar*, the indispensability of their role in the

distribution of water gives them a potential for agency – a leverage to negotiate their position and attain social gains. Mosse (1997a) noted occasions when the Pallar *nīrppāṉ̄aṟ* withdrew their services following disputes at temple festivals. He argued that '[t]hese ritual occasions give public focus to service roles and dependencies and are therefore occasions to raise the 'problem of honour', to make public protest and advertise the widespread collapse of hierarchical dependencies' (p.485). Thus, material practices, similar to other 'moments' of social process, could be a place where conflict is articulated, resistance is carried out and change is achieved, as much as it can reinforce relations of subordination and marginalisation. In contexts of unequal distribution of water resources, change of material practices to adapt to constructed water scarcity might reflect the marginality of those adopting such practices. In other cases, material practices to increase access to water resources, sometimes through 'illegitimate' means, reflect active *resistance* to established unequal power relations, which are influencing access to water resources.

I.6 Conclusion: A framework for understanding the dynamics of socio-environmental conflict

This chapter adopted a political ecology-influenced framework, and developed its application to understand socio-environmental conflict as a social process. The arguments of this chapter highlighted the shortcomings of defining property rights systems as institutional arrangements only and specifically emphasised how systems for access to and control over natural resources should be explored through the 'moments' of social process, in order to reveal contradictions, understand the dynamics of socio-environmental conflict and processes of change. Socio-environmental conflict needs to be explored in two "instances": that continuously operating to undermine prevailing PRS, and that which occurs due to changes introduced to those property rights systems. This chapter focused on the first instance as it defined the six 'moments' of social process revealing how each of those 'moments' could operate to reinforce or weaken prevailing PRS. The next chapter examines the different PRS, as 'permanences' in the history of environmental debate using the 'moments' of social process as a comparative analytical framework. This would reveal the processes which led to the establishment of those 'permanences', and touch upon specific historical instances of change in the property right system debate.

CHAPTER TWO

PROPERTY RIGHTS SYSTEMS AND THE ENVIRONMENTAL DEBATE

The 'social process' perspective

Introduction

This chapter presents comparative analysis of the different property rights systems (PRS): common, public and private, as historically constructed 'permanences'. Because PRS evolve within historical and ecological contexts, their analysis is carried out in a 'tentative' chronological manner because it is difficult and almost impossible to propose a universal sequence of how natural resources were managed. Moreover, it is also unlikely that only one form of property rights system prevailed at a certain time in any place over the whole range of natural resources. However, this chronological approach attempts to situate different PRS within the context of social and environmental thought of the past two centuries. Using the framework of social process, the ideology and principle assumptions of each system are explored, highlighting the fundamental differences between each system in terms of dominant discourse, assumptions of human/nature relations, meaning of environment, and the role of social organisation. PRS are investigated with particular focus on the dialectic and intrinsic relation between those systems and the role of power, beliefs, discourse, social relations, institutions and material practices in defining and mediating them (Harvey, 1996), stressing how each of those 'moments' could have stronger influence on the others within different PRS.

Although the comparative analysis does not seek to take a position for one property rights system against the others, it does attempt to question the underlying ideologies of the different systems and challenge their assumptions. This would serve to highlight the possible conflicts embodied within any property rights system. The chapter also examines what does each property rights system, as a 'permanence', reflect and reinforce about social processes, and to reveal the 'moments' from which contradictions emerged and 'discontinuities' occurred leading to the shift from one system to another. Once what is assumed to be 'structured' is established it would be possible to apply the same framework 'epistemologically' to reveal the dialectic relation between 'permanences' and 'discontinuities': to understand how change from one specific property rights system to another affect the dynamics of socio-environmental conflict, and how conflict operates through the 'moment' of social process to shape the outcome of that change constantly transforming what appears to be as a 'structured' property rights system.

The chapter starts by examining the management practices in pre-capitalist societies, which existed hundreds of years prior to the last two centuries on which this study is focusing: as those societies were the subject of criticism by those against common property regimes and the subject of iconisation by those defending them. The chapter then moves on to discuss the process of the enclosure of the commons and elaborates on both public and private PRS. The chapter also explores the recent phenomenon of attempts to recreate community-based resource management systems, which prevailed prior to development interventions, highlighting the challenges of such interventions and questioning their underlying assumptions. This leads to a discussion of collective action beyond that of rational choice and neo-institutionalist theories, emphasising the diversity of forms of collective action as part of the social process mediated by the dynamics of socio-environmental conflict.

II.1 Management of common pool resources in pre-capitalist societies – *Common property regimes*

Common pool resources, as all environmental resources, were for hundreds of years prior to the capitalist society appropriated by local communities seeking sustenance and survival. This, from a neo-Marxist political economic stance, is regarded as a non-exploitative mode of production (Johnston, 1996). Other disciplines such as anthropology and cultural ecology tended to study traditional common property regimes through the rational of culture, traditions, values and beliefs. Indeed, one or more dimension could contribute to prescribing how common property regimes are constructed. Considering the situated nature of property rights, the specific sources prescribing the society/nature relation could vary from one society to another. However, the exploration of those regimes through the 'moments' of social process would make possible to understand them as 'permanences' with specific underlying premises contributing to and prescribing the construction of institutions for managing common resources or rather collective action for use of those resources.

The nature of common property regimes (CPRs) in pre-capitalist societies has been largely discussed and defended by ecological anthropologists and deep ecologists (e.g. Descola and Pálsson, 1996; The Ecologist, 1993 and Goldman, 1998a among many others). Those tended in most cases to approach the issue with a romantic and nostalgic notion towards 'traditional' societies. Three tendencies can be observed from this perspective, all of which stem from certain assumptions about the human/nature relation that prescribes how humans 'treated' nature. Marxist anthropologists such as Julian Steward argued in the mid of the past century that environment shaped cultures and, subsequently, prescribed human behaviour towards nature (Milton, 1996). Social institutions and culture were considered to have adaptive responses to environmental conditions. This environmentally deterministic approach denied any power for humans determining their social practice regarding the environment. This approach is strongly criticised by the culturally deterministic approaches of structuralists and culturalists, who argue for a role of culture – institutions of beliefs, myths, rituals and systems of

classification- in prescribing the meaning of nature (Descola and Pálsson, 1996). These two seemingly opposed positions share a dichotomist definition of Nature/Society relation, which Ingold (1992), Hornborg (1996) and Pálsson (1996) criticise. They argue that as long as there is a dualist and separatist understanding of Nature/society, it is not possible to explain and understand the local forms of environmental knowledge and practice. Hornborg (1996) argues for a monist explanation of human/nature interaction. To him it is this in-separation of people, indigenous knowledge and their environment that lead to non-environmentally exploitative sustenance practices.

What comes across from the debate over human/nature relation is that it is more complex than what an environmentally deterministic approach or a culturally deterministic approach could offer. Although Ingold (1992) tries to offer an alternative approach, it seems to be a model based on effectiveness and usefulness and sometimes tends towards another form of environmental determinism, especially as Ingold (1992) bases his argument on simple examples that do not acknowledge the complexity of the human/nature relation. This immersion in an embedded notion of human/nature relation implies that *all* pre-capitalist societies are embedded within their environment and their practice is more or less a result of 'unconscious aspects of human mind' (Honborg, 1996, p.47). A more inclusive model, maybe more complex, could be offered by a dialectic understanding of the human/nature relation; a model based on the argument that both humans and their environments are 'reciprocally inscribed' (Descola and Pálsson, 1996, p.17).

The argument for CPRs in pre-capitalist societies is also based on the belief that pre-capitalist societies derived their knowledge about their environment through direct practice (Gibbs *et al.*, 1989; Ingold, 1992; The Ecologist, 1993; Descola and Pálsson, 1996 and Milton[1], 1996), which contributed to a more sensitive practice, constrained by the realities of their immediate environment. Hamilton (2002) calls this form of knowledge 'intuitive knowledge' and defines it as the evocative rather than analytical form of knowledge derived from 'direct or unmediated experience of the world' which 'has historically governed the inner relationship of humans to the natural world' (p.89). Indeed, traditional and practical (or intuitive) knowledge is a main source for resource management practice of pre-capitalist societies. However, it is *not the only* source for signification of nature and, consequently, it is not the only basis of resource management practice in pre-capitalist societies. Hanna and Jentoft (1996) refer to such understanding in the context of discussing the human rights to nature; 'Across cultures and time, the natural world *has shaped* and *been shaped* by the way people think, act, and live. Beliefs and ideology have framed the relationship between people and nature, social and economic groupings have formed human behaviour, and ecological variability has influenced styles and living' (Hanna and Jentoft, 1996, p.35; Italics added).

[1] Although Milton (1996) agrees that knowledge in pre-capitalist societies is 'derived directly from practice', she does not agree with the thesis that this implies that all pre-capitalist societies had lead conscious environmentally sustainable practices.

This notion brings in the role of religion in constructing human/nature relations, which seems to have been left out by many ecological anthropologists. Indeed, from environmentally deterministic perspective, it could be argued that the human/nature relation actually prescribed religions as forms of culture. But human/nature relation is not as unconscious and embedded, as some ecological anthropologists would like to argue. Values and beliefs in many pre-capitalist societies stemmed in many cases from their myths and religions, inherited from one generation to another forming, in many cases, the basis of many aspects of social practice. Different religions portrayed and constructed a spectrum of societal relations with nature ranging between notions of the protection of nature to the fear of nature, but it does not necessarily imply an intrinsic relation with nature[2]. There are many examples of pre-capitalist societies that have defined a clear border between what is human and what is natural[3]. Islam, for example, is an anthropocentric religion, which sets human beings in a separate league from the "rest of the creation": 'Indeed we have honoured the children of Adam, and carried them over land and sea, provided them with good things for their sustenance, and exalted them over many of Our creatures' (*Al-Qur'ā n*, 17:70). Islam gave humans power over nature, which they –'the vicegerent of God on Earth' (Nasr, 1996, p.213) should protect as the creation of "God". This is one example of religion giving meaning to nature separate from that of humans. Yet, religion is not the only source of knowledge for Muslims. The meanings they assign to nature are constructed through complex social processes of materialistic and symbolic experiences.

Although social practice in regards of nature and environmental resources could be explained through an understanding of the role of religion, culture, practical knowledge and the human/nature relation, further exploration needs to be carried out to understand how is it that societies organised themselves to use 'common' environmental resources, such as water. Managing environmental resources is necessarily a material practice. In the pursuit of survival, societies have a 'long history of self-regulation. Social institutions of all kinds emerge to meet social needs' as Arrow has forwarded the work of Hanna et al. (1996, p. xiv). The value of water, for example, was seen as a biological need as well as a livelihood one, especially for pre-capitalist societies depending on water for farming and feeding their cattle. Thus, in pursuit of material 'production' for human consumption and survival, societies, developed institutions for regulating resource use, through dialectic interaction between their culture and nature. Not only were those social institutions based on the constraints of what the environment could offer. They were also reflections of how culture, beliefs and social organisation of those societies have dictated the distribution of environmental resources. Common Property Regimes are *not* 'no property' or open access systems as Hardin's (1968) 'Tragedy of the Commons' argues. Historians and anthropologists use the term 'Common Property' to refer to 'Collective Property Rights' with actual 'Common Property Institutions' (Quiggin, 1993), which despite its wide

[2] For examples of those relations, see Nasr (1996) and Cooper and Palmer (1998).

[3] For examples, see Croll and Parkin (1992).

variations has a critical defining feature: the collective management of a resource by a finite group of owners.

Durkheim argued for this concept of collective action, which criticised the individual centralism of the utilitarian thought of the 19th century on the basis that it 'completely over-looked the existence of social rules which acted as constraints on individuals' (Morrison, 1995, p.125). In his thesis, Durkheim referred to the concept of solidarity in understanding social bonds, relations, interchange and integration that mediate the relation between individuals within a certain society and how they relate to the society itself (Morrison, 1995). For Durkheim, the institutional basis of pre-capitalist societies is religious, educational and family institutions that include beliefs, practices, collective representations and collective forms of action (Morrison, 1995). Social facts were defined as structures that 'constrain and regulate human actions' (Swingewood, 1984, p.99). Durkheim, thus, has re-established the role of cultural values and beliefs in influencing individual action through the construction of social institutions. An example of such 'solidarity' would be the Indian villages, which are argued to be key institutions in pre-capitalist societies through which arrangements are made to avoid subsistence crisis. However, the hierarchical composition of those arrangements and the priority of sub-caste over the territorially-defined groups should not be over-looked when considering forms of collective action on those societies (Wade, 1988).

Durkheim's solidarity concepts could be criticised for over-simplifying their sources by his dichotomist division of societies into traditional/modern and for over-emphasising the role of structure over agency. However, his work still offers an understanding of the sources that influenced how some pre-capitalist societies organised themselves to manage their common resources. The motivation for collective action could originate from various sources of social relating. Even in pre-capitalist societies values and needs varied from being symbolic to being materialistic. Realising a commonality of values/beliefs/needs could have initiated collective action in specific contexts in the pre-capitalist societies to manage natural resources. There are many examples of this in the field of anthropological research (e.g. Croll and Parkin, 1992). Although it was a material practice for survival, the notion of 'property' was not, and is still not, explicitly developed in such societies. Even in feudal societies, although it was based on land resources, it was used was not regarded as an economic resource. 'It was part of cultural, social, political and religious rules and customs' (Barry, 1999, p.135). The peasants had customary rights of access to use common land, which was organised within the hierarchical form of the feudal society, including the exploitation of the peasants for the benefit of the 'Landowner'. This is another manifestation of role of broader forces in shaping human/nature interaction and social organisation around nature: in particular, power relations.

Discussions on social institutions for managing environmental resources are based on research of pre-capitalist societies, which hardly exist now in their 'pure' or 'original' form. They also seem

deterministic and assume a homogeneous relation between members of those societies. The romantic and utopian position towards CPRs tend to regard them 'as transcending any individual interest, and hence to disregard the fact that common property rights are *the rights* of particular individuals' (Quiggin, 1993, p. 1127). If we were to accept that those institutions have contributed to preserve the environment for so long, something which can not be generalised anyway, it would still be not possible to assume that the those social structures were based on equal power relations. The basis of social relations and institutions could vary from one society to another. Thus, it would not be possible to carry out a universal test of that assumption. Whether it is religion, values, beliefs, material needs and/or practical and inherited knowledge, they are not necessarily founded on principles of equity, which could also be defined and constructed by different societies in different ways.

In order to understand how change in property rights systems influence the dynamics of socio-environmental conflict there is a need to establish an understanding of what ideologies and dominant discourse has prescribed social relations and human conditions and consequently constituted previous property right systems to start with, i.e. CPRs. This includes, in addition, to religion, values, beliefs, practical and inherited knowledge, and material needs, a dynamic understanding of how power relations are articulated within those societies, how is it prescribed, and how does it prescribe social relations and social organisation in terms of CPRs. The role of power in determining access to and control of environmental resources is central to the field of political ecology. However, more research needs to be carried out to explore the implications of change in CPRs in reshaping social structures in societies be it in terms of gender, age, identity, or even class or ethnicity[4]. Indeed, research in this area seems to need to be done in an empirical approach, as such constructions vary from one context to another. However, this can be achieved using the framework of the 'moments' of social process and comparing the change in the features of such map as we shift from one system to another.

II.2 The enclosure of the 'commons'

It was not before the Enlightenment and modernisation era that the concept of property rights developed in its economic sense. The Enlightenment project and Modernisation have formed the basis of the Western thought for the last two centuries. The ultimate belief in universal values and scientific wisdom are the fundamental characteristics of the substance and method of the Enlightenment project. This has led, among other consequences, to the degradation of nature as a result of the accompanying industrialisation process (Atkinson, 1991; Barry, 1999; Hayward, 1994)

[4] These notions tend to be over-looked in researching contemporary "non-capitalist" societies. Thus, it is important to investigate notions of gender, age, identity, class and ethnicity in any society since migration, political change, media and technological advancements contribute to intensifying the heterogeneity of seemingly-homogenous societies.

and the alienation and marginalisation of 'other' cultures (Dickens, 1996; Hayward, 1994), through the domination of the Western 'progressive' culture over systems of thought.

The scientific thinking of Descartes, Newton and Galileo has formed the foundations of the Enlightenment Project (Swingewood, 1984). The Cartesian rationalism of Descartes (1596-1650) inspired the dichotomist approach of the Enlightenment and Modernist project to social theory (Barry, 1999). This dichotomist approach did not only lead to a separatist understanding of some intrinsically related or united social constituents. It also led to organising them in a hierarchical manner, where nature is *dominated* by society/man, man is stronger/better than woman, modern is better than 'primitive', white more intelligent and refined than black, etc. (ibid). The dominant discourse of Modernisation iconised scientific knowledge, which was supposed to shift the power from nature to humans and emancipate them from past restrictions and superstitions (Hayward, 1994). This process has not only emptied history from 'will, energy and power' (Swingewood, 1998, p.147), but also led to the total disregard for the impact of human actions over the environment and 'other' cultures and systems of thought were stigmatised as primitive and backward (Atkinson, 1991).

The Enlightenment project prescribed the underlying premises for industrial capitalism and the market economy, which was based on the use of land, labour and capital for production processes, the three of which being completely separated from the society (Johnston, 1996; Barry, 1999). Inherent to that, the enclosure of the commons -the land- was perceived as 'a necessary step to take in order for social development, progress, civilisation to proceed' (Barry, 1999, p.135). Consequently, the process of enclosure extended to include environmental resources in the colonised world (Bryant and Bailey, 1997) resulting in the displacement of many societies from their natural environment; sometimes under the notion of environmental conservation and others through the control of those resources for further exploitation[5] (ibid). Enclosure was a systematic process where by the right to appropriate nature was taken from those living in direct proximity with natural resources to states and empires totally removed from the limitations of the natural environment.

In his critique of the Enlightenment, Atkinson (1991) highlighted how scientific theories were *not* used for the benefit of all mankind, but rather used for the advancement of certain individuals, classes and nations (ibid, p.135). 'From this point of view, what we call Man's power over Nature turns out to be a power exercised by some men over other men with Nature as an instrument' (Lewis, cited in Atkinson, 1991, p.135). Industrial capitalism placed power in the hands of those who possess capital, with the market as the institution through which it is mediated. Indeed, the quick diminishing of environmental resources has led to a rise in an economic concern over those resources. The need to manage and control environmental resources developed from within the

[5] See also The Ecologists (1993) for detailed historical account and criticism of the process of enclosure.

notion of the need of those resources for the continuity of economic growth. It was only then, that issues of environmental property rights were introduced.

From within the notion of social progress and based on a neo-Malthusian ideology, Hardin (1968) developed his theory on 'The tragedy of the commons', arguing that if it were not from tribal wars and disease the tragedy would have materialised already. Thus, Hardin (1968) suggested either selling them off as private property or keeping them as public property with allocation of the right to appropriate them. In Western societies, property rights systems for the enclosure of the commons implied a mix of both private and public property rights, depending on the nature of the resource. On the other hand, communist societies, as well as newly independent authoritarian states, adopted a central role for the state in the management of environmental resources (Johnston, 1996). Both positions for capturing the 'commons' have stemmed from the political economy thought and have recently developed their discourses within the environmental and sustainable development debate. The growing support for market economy and global economic integration, as well as the decline of the communist system, have characterised the past two decades with most states embracing privatisation processes.

II.3 Capitalist political economy and the privatisation of environmental resources

Classical –capitalist- political economy has had a central role in the process of 'The enclosure of the commons'. Its ideology was based on the pursuit for economic growth discourse –the icon of development and modernisation- established by the classical economy of Locke, Adam Smith, Hume and their followers (Harvey, 1996). This approach was embraced by the Western nations in their quest for 'economic growth' and accumulation of capital. It believed in 'the freedom of market as well as the hidden hand [...] as a means to couple the increasing productivity which would free society from want and need, with a capacity for individualised self-realisation through market choice' (ibid, p.124). The classical political economy had a liberal rhetoric with a single definition of civilisation situated within the belief in 'progress'. Enclosure, thus, was initially and for a long time, a purely economic process, commencing in the 15th century in Britain and expanded in the colonies in the pursuit for more production and consumption. It was further practised in post-colonial states in their quest for development (The Ecologist, 1993).

The belief in the sole validity of Western thought had a number of implications with particular impact on CPRs. First, it led to the distinctive separation of humanity from nature. The dominating 'free-individual discourse' deemed individuals to become utility-maximisers 'with material preferences and interests, disconnected from the social situations of existence' (Healey, 1997, p.40). This tendency gave 'man' the right to dominate nature and exploit it for 'his' own purposes i.e. growth, development and accumulation of capital. Second, the modernisation process was accompanied with scientific and technological developments that instituted scientific knowledge as the 'only

epistemologically adequate knowledge' (Nygren, 1999, p.271) and the only source for the whole Truth about nature (Bird, 1987). Local knowledge of natural resources was challenged and marginalized by the hegemonic discourse of the enlightenment, which consequently implied 'Enclosure' as a way to properly manage environmental resources. The 'environmental awareness' awakening of neo-classical political economists regarded the socio-economic practices of local communities as endangering to the environment. This position was adopted by international aid agencies (Goldman, 1998b) in the second half of the century and formed the basis for policy making of the developing world especially in their efforts to meet their debt payments requirements, which can also be traced within the Corporate Managerialism in the environmental debate (Harvey, 1996).

The concept of private rights originated in Locke's thought, who believed that 'the private appropriation of scarce and valuable natural resources is necessary and sufficient for the market to emerge among atomistic resource owners' (Bromley, 1991, p.7). For Locke, the 'right to appropriation derives from the need for all to secure sustenance and from the right of all to the fruits of their own labour' (ibid). However, Locke's concept of privatisation was static and did not accommodate for change, which took place in the capitalist society, where aspirations changed from 'sustenance' to 'accumulation' and 'labour' became a commodity. The argument for privatisation of property rights was strongly brought back as a result of the 'dying state socialism and rising neoliberal capitalism' (Goldman, 1998b. p.12). Those believing in the Libertarian Theory argue that through the free market 'all' people would be granted freedom to buy and sell all that they want (Wenz, 1988). They argue that 'private property' and a minimal role for the state are crucial for the maintenance of individual freedom. Although Libertarian theorists such as Locke and Adam Smith believe in the role of the state to ensure the application of law and minimisation of fraud, they advocate for a *laissez faire* economics to ensure maximum individual liberty and economic efficiency (Wenz, 1988).

The economic determinism of this position has a number of principles underlying the construction of its institution –the market. The basic principle for privatisation is turning environmental resources into a tradable commodity (The Ecologist, 1993) in a free market. Competition becomes the only mode for regularising the market. Those rules and regulations and the struggle for existence were perceived to be able to influence social relations to be conducted in a manner that will ensure adaptation and co-operation that would conserve environmental resources (Harvey, 1996). This competition is regarded as the incentive for 'property owners' to conserve its appropriation in the quest for efficiency, which would guarantee profitability[6]. Technology plays a major role under this system, as it would offer the ways for optimal appropriation of resources. Wenz (1988) argues against that ideology, especially when questioning how property rights over natural resources are acquired and who are entitled to those rights. An example of that would the over-pumping of underground water resource from a privately owned well, due to the power and financial and technical abilities of

[6] See Bruggink (1992) for an example of the argument for privatisation of groundwater use in the USA.

its owner, which would adversely affect the quality and quantity of the water table and, consequently, the entire community depending on it for their survival and livelihood. This economically centred approach ignores the role of power and 'vested' interests in the dynamics of the process, despite the major role they play in the dominating discourse and workings of the market.

The change of 'property rights' themselves tend to have major impacts on societies traditionally managing their own resources. The case of water as a common pool resource in this context is quite complex. Because of the nature of water, privatising the resource becomes technically difficult. Nonetheless, individuals or groups could get a private *right* over the flow of water. The complexity arises here in the question of what determines that allocation of that right. How is it that rights to water are allocated in a context where water used to be commonly managed? There is always a chance that such systems will either produce or reproduce inequity, especially that when access to environmental resources becomes tied to access to capital which is unevenly distributed. In their criticism of neo-liberal orthodoxy in Britain, Crouch and Marquand (1995) argue that the new right individualism had set individuals against less resourceful individuals. Borrowing Orwell's phrase on equality they argued that neo-liberalism 'makes some individuals more individual than others (ibid, p.5). By denying some actors resources 'property rights' they would be stripped from a source of their livelihood, material practice and power. The Ecologist (1993) gives an example of how some enclosure practices overlooked the dynamic relation between power and property rights when they stripped Native American Iroquois women from their traditional rights to land tenure and practising agriculture leaving their livelihoods under the mercy of men, which led to their dominance by men and confining their social and economic practice.

II.4 State-centred common pool resource management

Still within the Enlightenment notion of emancipation and self-realisation, communitarians of all sorts, argued that achieving those aims is through collective rather than individualistic action (Harvey, 1996). However, this was supposed to be achieved through 'some alternative form of political-economic organisation' – a truly public realm or a 'moral economy' of some sort – in order 'to deliver on Enlightenment promises' (ibid, p.125). In Marxist thought, the need for a public realm was to protect the working class from oppression and exploitation (Morrison, 1995). Thus, and still within the realm of political economy, though a Marxist political economy, that a central role for the state was constituted. With development and modernisation still central to its discourse, Marxist political economy was led by principles of equal distribution of wealth. This is the central difference from the position of liberal theory. However, the discourse was still embedded in the rhetoric of growth. Communist Regimes adopted the 'Marxist' concept of collectivist government, which sought to equilibrate the national economy and the efficient allocation of economic resources (Yong, 1992), including environmental resources.

Nonetheless, discourse does not necessarily always translate into practice. Although it is argued that Marx had a protectionist notion towards the environment, those states that adopted his thought still shared the concept of the domination of nature with the capitalist world (Johnston, 1996). Defenders of the state-centred management of environmental resources also share with the capitalist ideology, a trust in scientific knowledge. Croll and Parkin (1992) include examples of the impact of the Soviet Union on traditional practices of the societies it dominated, highlighting a dismissal of the cultural basis of social and material practices of those societies. In the Communist regimes, the government was the only 'trusted' institution establishing laws, rules and regulations to safe guard the people and the nation from 'free-riding'. 'All the citizens become employees and workers for only one 'cartel' of all the people, of the state' (Linen, cited in Yong, 1992, p.394). In many cases, this has resulted with stripping many societies and individuals of their sources of livelihood and survival.

The central role for the government in managing environmental resources was not only adopted by the Communist regimes. Authoritarian governments in the developing world, especially in the sixties adopted state-central management regimes. There are also examples of state-managed services in the capitalist countries. In Britain, 'Collectivists came to believe that competitive capitalism was economically inefficient, especially in the provision of basic needs. State planning and state ownership were advocated partly as ways to dispossess capitalists and redistribute wealth, and partly to make the economy more productive. (Crouch and Marquand, 1995, p.9). Even the most 'liberal democracies' -the United States- still have state-centred resource management in some of its states (Bruggink, 1992 and Emel *et. al*, 1992). This is particularly relevant to ground water resources, which are seen as contradictory with notions of privatisation as it cannot be easily commodified (Emel *et. al*, 1992). 'Both the security (bearing the right to exclude others from use) and the transferability dimensions of property rights in water are hampered by [...] the interdependence that the flow characteristics of water creates [...] since aquifers do not recognise property boundaries' (ibid, p.46). As suggested above, technological differentials could result with unequal access to water, which could reproduce 'open-access' systems that could in fact lead to the 'Tragedy of the Commons'.

As in the case of privatisation, the awakening of governments' 'environmental awareness' especially in the last three decades of the century had also formed the bases for Enclosure of environmental resources to 'protect' them from degradation. This includes a wide range of political diversity that Harvey (1996) described. One of which is authoritarianism, which is based on the neo-Malthusiansm of Hardin's thesis (1968). State Managerialism is a wide spread case of a '[w]eak version of the authoritarian solution' which 'rests upon the application of techniques of scientific-technical rationality within an administrative state armed with regulatory and bureaucratic powers in liaison with strong 'big' science and big corporate capital (ibid, p.177). The 'sustainable development' discourse of the 1980s, which emerged from the environmental debate of the early 1970s (Irwin, 2001), and was co-opted by international aid agencies, large industries, transnational corporations and

governments by the time for Rio Summit in 1992, has adopted such approach to the management of environmental resources (Goldman, 1998a).

The arguments for state-centred management totally dismissed the role of culture, values, beliefs and social relations in constructing prevailing CPRs in non-capitalist societies. This was particularly the case in the creation of nation-states in the developing world (The Ecologist, 1993). It involved the drawing of unnatural boundaries[7] encompassing societies of a wide variation of cultural basis for their social institutions and socio-environmental practices. In post-colonial Third World countries, governments embraced the development discourse and ideologies of the countries providing technical and financial assistance for their establishment. They imported their technologies and adopted their systems within their state institutions. This led to the marginalisation of traditional practices and creating new needs for the techniques, tools and products of the developed world (Yapa, 1996). Nation-states imposed new management systems on 'local' societies disrupting the socially and culturally embedded values and foundations of social, political and material practices of those societies, which endangered their very survivall. Intervention of the state created 'an opportunity for the economic and political élite to misappropriate it' (Dove, cited in Li, 1996, p.515) reinforcing existing unequal power relations within those contexts influencing all aspects of social process, as well as access to and control of resources. State-centred approaches to the management of environmental resources placed power in the newly established institutions of bureaucracy. This in many cases led to the abuse of the system either by the inefficiency of low paid employees maximising on the opportunities of the long and hideous procedures or through corruption.

Although criticism towards the role of the state in the management of common pool resources has largely been based on the limited abilities of the state to efficiently manage those resources, especially by neo-liberal economy, the state has also been criticisedl in the context of its control of common pool resources. The basis of that criticism is that the state's objective is mainly the pursuit of economic growth, which contradicts with environmental protection on the national level and in many cases resulted with the 'tragedy of the global commons' (Bryant and Bailey, 1997). On the other hand, the privatisation of common pool resources is argued to be difficult and is also subject to failure especially in cases where boundaries and users are hard to identify (Arrow forwarding Hanna *et al.*, 1996). Moreover, market mechanism and scarcity do not always necessarily lead to 'efficient' use of environmental resources especially on the long term.

Both the state and the private enterprise have been criticised for overlooking issues of social justice in the pursuit of 'efficient' environmental use. Moreover, there are many examples that illustrate that neither has led to the preservation of nature nor an equitable distribution of those environmental

[7] This is particularly relevant to water resource, since in some societies, such as Muslim societies, territoriality is important to assigning rights to water use.

resources. Hardin (1968) is largely criticised because what he was actually describing was 'open-access' system rather than common property rights regimes. He ignores the presence of social cohesion and bases his argument on purely individualistic practices (Ostrom, 1990; Hanna and Jenfot, 1996; Bryant and Bailey, 1997). In that process he dismissed the existence 'the long history of self-regulation. Social institutions of all kinds emerge to meet social needs' (Arrow forwarding Hanna *et. al.* 1996, p.xiv). Literature on common pool resources gives examples of cases where communities develop their own rules for use of natural resources based on non-contractual and informal social values and norms (Ostrom, 1990, Hanna and Jentfot, 1996).

The aim of the above discussion is not to promote common property rights systems on the account of the public and private property right systems. The over-simplified image of harmonious communities projected by anthropologists and argued for by ecologists within the sustainable development debate led, in the recent years, many governments, NGOs and aid agencies to embrace the concept of community-based natural-resource management with a blind vigour and apply it in some cases of management of natural resources. This tendency and its approaches are being examined and criticised as lacking in their understanding of the 'communities'[8] they intervene in. Rather than taking a position for a certain property right system, those scholars are more interested in understanding the social processes within those 'communities' and the impact of intervention on those processes.

II.5 The return to Community-Based Natural Resource Management – *The failure of the 'magic wand'*

Many natural resources, especially water, have been managed for hundreds of years through common property regimes. Emel *et. al* (1992) describe property rights as 'legal and moral institutions' that 'integrate nature and society' and 'organise relationships between individuals and the material world which are then translated into pattern on the resource landscape' (p.38). CPRs are dynamic constructs and organisers that articulate all 'six distinctive moments' of the social process. The foundations for their organisation vary from one society to another. Although the conditions that created those institutions might disappear, they still exist reinforcing and being equally reinforced by prevailing power relations, social hierarchies, values, and material practices, discourse, knowledge and institutions. CPRs operate within dynamic social processes and change: All societies react to, interact with and reorganise themselves according to change, sometimes re-creating it, to ensure their own survival. To many, such as Wade (1988), there is a third way for the avoidance of the 'Tragedy of the Commons', besides the establishment of private property rights or giving the state the full authority

[8] This study avoids the use of the term 'community' due to the assumptions implied in the word. Alternatively the terms context, social context and, society are used without implying any notions of social harmony. Nonetheless, the thesis does not deny, that in any social context, a group of individuals could develop such societal relating on the basis of their shared values, identities or interests.

to regulate the commons, that is 'village republics' which 'themselves constituted an authority to impose rules of restrained access' (p.18).

Scholars, from different disciplines and positions, have taken a specific interest in the arising tendencies by governments, NGOs and international aid agencies to encourage or re-establish community-based natural resource management systems. The growing critique of modernisation and the wake of environmental consciousness is one of the justifications behind this tendency. The 'Sustainable development' discourse of the Brundtlant Commission, the focus on locally-based solutions, and the romanticised images of community by anthropologists and cultural ecologists led to the emergence of policies and programmes supporting the re-establishment of community-based management systems (Leach *et al.*, 1999; Mosse, 1997a). Nonetheless, the assimilation of sustainable development discourse by government and donor agencies is not the only reason behind such approaches. In the light of the poor fiscal performance of state agencies and their growing international debt, community-based management systems offered an opportunity for the unburdening of the states responsibilities (Mosse, 1997a).

The criticism of such approaches lies in its main assumption about the societies they intervened in: that is the image of the homogenous and timeless 'community' (Leach *et al.*, 1999; Li, 1997; and Mosse, 1997a). Emel *et. al* (1992) argue that 'In non-capitalist ideologies of water 'ownership' the key element is a refusal to treat the resource strictly as a commodity for individual use' and that is 'an ideological form embedded in past modes of production stressing community over individual control of water and placing values such as fairness or social justice above wealth maximization' (p.46). By perceiving the society as a homogenous and internally stable organism, such models have tended to 'misrepresent common property resource systems as autonomous, internally sustained equilibrium and rule governed systems (Mosse, 1997a, p.471) assuming that they are all 'capable of acting collectively toward common environmental interests' and living in harmony with nature. Consequently, they overlooked the importance of institutions, power relations, values and meanings in creating and mediating such systems (Mosse, 1997a).

Experts who perceived societies as passive actors in the process of re-establishing those systems (Leach *et al.*, 1999) have failed to recognise how the actors within those contexts employed different discourses in order to ensure maximum 'gain' from the change. The conventional privileged within those societies would use discourse on traditional property rights to ensure the re-enforcement of their original entitlements (Li, 1997). Different actors, whether weak or powerful, would try to use discourse of de-legitimisation to exclude others from access to those systems. Mostly those who are in powerful positions are more successful in that task. Furthermore, and most importantly, even when such societies refer to discourses of egalitarian principles, 'such as equal inheritance for all children regardless of age and gender' those discourses are not necessarily translated into practice.

This could be due to institutionalised cultural rituals or exercise of power within an observable or latent conflict.

The failure of such projects to recognise such mishaps in community-based management systems is that they still approach them as economic mechanisms. Property rights are embedded in political processes and reflect the 'extended and maintained domains of control' of certain members of the society (Mosse, 1997a, p.477). Even when the sources of gaining entitlement to a certain resource seem equitable, the limitations of social relations and material practices could prevent certain individuals from gaining those entitlements. In the case of property claims in Indonesia, Li (1997) revealed how labour theory prescribed right to land in indigenous societies. Those who clear the land from primary forest were considered pioneers and enjoyed right to that land, which implied the exclusion of women, who did not have the physical ability to fell trees. Knowledge can also be used in those arrangements as a weapon for exclusion. Social constructivists equal scientific knowledge to local knowledge in being social constructs 'created out of social experience, cultural values, and political-economic structures' (ibid, p.256). Both can be constructed through the 'moments' of social process for the benefit of the powerful. Today, through the dominant discourse of development, scientific knowledge took a prominent position, influencing meanings of natural resources and the understanding of their constraints. The re-establishment of community-based natural resource management does not necessarily embrace previous 'local knowledge', but are mostly based on the use of new technologies. Access to and utilisation of such knowledge might influence power-relations as well as practice. By the same token, exclusion from such knowledge or refusal to use it results with the marginalisation of those who do not access or employ such knowledge in their practices.

It is also important not to fall into the trap of assuming that local knowledge is static or isolated constructs: 'it is a product of a negotiation process between what is present in the public sphere and subjective experiences' (Edmondson, 1997, p.10). This takes us to the other dimension of the misrepresentation of societies, which is the tendency to regard them as 'a given society or culture outside-of-history' (Li, 1997, p.509). Policy makers have tended to over-look issues of transformation and change within those societies (Leach *et al.*, 1999; Mosse, 1997a). It is important to distinguish between two forms of change in this context: 'transformational change' and 'sudden externally-induced change'. Indeed, both forms of change are influenced by external factors as well as internal factors. However, the difference lies in the fact the transformational change is the continuous process of transformation occurring within societies that could be resulting from the active agency of individuals within that society, ecological change at local, regional or national level and/or interaction and reaction with historical changes at different levels. 'We live through culturally-bound structures of rules and resource flows, yet human agency, in our continually inventive ways, remakes them in each instance, and in remaking the systems, the structuring forces, we also change ourselves and our cultures. Structures are 'shaped' by agency, just as they in turn 'shape' agency' (Healey, 1997, p.47). It

is quite difficult now to find a society that is absolutely 'traditional' or 'indigenous' in the manner that policy makers are assuming societies to be. Furthermore, local societies are not removed from processes taking place in their states (Mosse, 1997a) such as political rule, economic practices or development approaches. And it would be quite naïve to assume that those societies do not deal and interact with those changes.

Furthermore, many of those societies have been subjected to sudden and disruptive changes specifically in the manner their natural resources are managed. Process of state appropriation or privatisation had taken place in many societies sometimes more than hundred years ago. Such changes have led in many cases to 'erode, dissolve or undermine' (Mosse, 1997a, p.470) their 'traditional' social institutions and relations even when those used to be sustainable and equitable. It would also be quite naïve to assume that by waving the 'magic wand' of re-establishing community-based resource management institutions that those societies would transform again into what they used to be one hundred, fifty or even ten years ago; regaining their lost values and rebuilding their 'assumed' equitable power and social relations. This is not to argue against common property rights systems. It rather highlights the need to use a coherent framework in order to understand a property right system and manage to draw a schematic map of the inherent observable and latent conflicts within such system. Consequently this would serve to understand the implications of intervention, regardless of the property right systems they propose, and how they influence the dynamics of socio-environmental conflict within those contexts.

II.6 Change, socio-environmental conflict and resistance – *Beyond rational theories of collective action*

Although the above section discussed the possible impact of change in property rights systems on the social processes that they embody, it was with specific reference to the re-creation of common property systems. This section attempts to situate conflict within the changing contexts of property systems. The concept of conflict has been a controversial issue in social theory and its debates over the concept of power. In the context of the property rights debate, the definition of conflict has been rather limited to the aspect of access to and control over resources, and was limited to observable conflict, mostly overt, which categorises actors within that conflict through simplistic and dichotomist concepts of 'good' vs. 'evil'. Donahue and Johnston (1998), for example, argue that 'the story of water is all too often a story of conflict and struggle between forces of self-interest and opportunities associated with 'progress' and the community-based values and needs of traditional way of life' (p.3).

Conflict exists within any property right system due to the inherent heterogeneous nature of societies reflected in all 'moments' of social process. Thus, in order to understand the dynamics of conflict in changing contexts, there is a need to draw a cognitive map of the social process within the studied society before the introduction of change. The approach would reveal the contradictions prevailing in

'permanences' from which 'discontinuities' emerge: an approach to unveil the dynamics of conflict and processes of change, whether observable or latent. Using the same framework, it would be possible to analyse intervention or change of PRS, in terms of its 'possible' impact on each 'moment' of the 'existing' social process and comparing it with its 'actual' impact on social process. The 'moments' of social process would serve as the possible entry points from which to investigate change, which it could be induced from within one or more of the 'moments'.

Different groups or individuals within the society tend to react in ways that would maximise their possible gains and minimise the possible losses within the social process. This is especially the case, when the societies are aware of their inability to influence the intervention or shape it themselves. However, such actions are not necessarily practiced in an observable or even in a consciously calculated manner. Any 'moment' of the social process might be articulated, consciously or unconsciously, to mitigate processes or outcomes of change. *Resistance* to change could be spurred by threat they pose to the culture of those societies hitherto managing their commons through local institutions (Bryant and Bailey, 1997). New 'institutions' could challenge long-founded values of those societies or their traditional knowledge, as much as they change rights of access to and control over resources. New distributive rules could change the entire power relations and social hierarchies. It might give more power to some actors and capture it from others within the society itself. Changes in PRS might reinforce prevailing power relations and further marginalize the weak, as power structures could *influence* the process itself (Layder, 1985). New institutions could get *co-opted* by local leaders or by the reproduction of current social organisation. In addition, change in water property rights also brings in new actors/appropriators disrupting 'existing patterns of resources holdings' (Emel *et. al*, 1992, p.47). Thus, there is a need to also understand how 'attendant discourses are developed to facilitate or block the promotion of specific actors' interests' (Bryant and Bailey, 1997, p.21).

However, power, although unequal, is rarely 'one-way'. Traditionally weak actors could have 'weapons' that assist them in their resistance of and reclaiming their rights from traditional powerful (Bryant and Bailey, 1997). Even 'relatively powerless people demonstrate well-honed analytical skills and strategies as a routine condition of day-to-day survival and long-term advancement' (Li, 1997, 502). Sometimes this is achieved by the assimilation of the discourse of change and reshaping it in a way to push for their own rights. This does not imply that no other forms of conflict appear in such situations. Sometimes, through social relating, groups of individuals, powerful or weak - collectively work together in order to resist the negative implications of a certain property right system on their lives involving action that range from confrontations to discursive acts of manipulation. Scott (1985) argues that resistance which is carried out by the 'weak' and marginalized takes various forms short of being outright 'collective defiance [... such as] foot dragging, dissimulation, false compliance, pilfering, feigned ignorance, slander, arson, sabotage' (p.29). Such forms of collective resistance

highlight collective action as a political activity rather than an institutional arrangement for the management of resources only.

Collective action is widely studied as cultural or economic institutional arrangements for the management of common pool resources (e.g. Bromley, 1991; Ostrom, 1990 as socio-economic institutions; Goldman, 1998a; The Ecologist, 1993 as cultural institution). The over-emphasis on collective action as a management institution overlooked the role of collective action as a political activity, which might emerge within any form of property right system: common, public or private. In his research on collective action in some Indian Villages, Wade (1988) argues that cultivators act collectively to reduce risk of social conflict as well as crop loss. However, collective action can also be an expression of conflict. From a post-structural political ecology perspective those are conflicts over meanings as well as material conditions (Escobar, 1996) and their expression vary in terms of form and size: from social movements at global level to local activities of everyday resistance (Peet and Watts, 1996b). Such diversity in forms of collective action undermines modern theories of collective action, which are based on Olson's work of the 1960s and 1970s.

Proponents of Olson's principles of collective action tend to de-politicise the nature of collective action and try to reach a universal formula for the emergence of collective action or conditions for its success. Sandler's (1992) work re-visits Olson's theory on collective action arguing that the success of collective action lies in the impact of three important factors: group size, group composition and institutional design. Although these factors might be used to examine some aspects of collective action, they are still situated within game theories and the field of economics. The fact that there are many examples of successful collective action in varying group sizes and of diverse compositions[9] defies any generalisation on the size of successful collective action. Thus, more interest is being given to collective action as a political activity and the importance of political context to its emergence and success (e.g. Edmondson, 1997a; Peet and Watts, 1996a). More attention is being given to the role of power and knowledge in the development of collective action. Edmondson (1997b) argues that political collective action cannot be assessed without tracing 'the concealed or unnoticed patterns of power which develop within collective group' (p.3).

Edmondson argues that the examples in his book emphasise the "fluid" processes that contextualise collective political action. 'The forms taken by collective action, therefore, cannot be deduced from *impacts of structures* on the one hand or *contingencies* on the other. They are shaped, in ways, which *change* over times, by actors' beliefs and values as well as by the availability to them of particular political repertoires' (Edmondson, 1997b, p.5). Another notion that needs to be considered about collective

[9] Aarts (1997) studied the mobilisation of collective action in four different residential areas in the Netherlands suffering from soil pollution and concluded that such mobilisation could not be explained through the three factors of group size, heterogeneity and resources.

action is that it is not always mobilised as a form of resistance. Collective action could be adopted by weak groups through adaptive behaviours in response to public problems or by strong groups such as entrepreneurs developing forms of association in order to maximise benefits within capitalist and neo-liberal systems. Crouch and Marquand (1995) argue that the individualism which the proponents of neo-liberal orthodoxy call for is actually a lie as individuals who are able to stand for themselves within such system are those who 'mobilise the resources of a large, privately owned collective unit' (p.7) such as consultants, entourages, expensive professional advisers and even associations that serve their collective interests – the 'collectivities of wealth controllers and managers' (p.8).

By the same token, weak individuals are not always able to resist changes especially in cases of latent conflict. Connelly and Smith (1999) argue that the 'existence of consensus does not indicate that power is not exercised' (p.13). The consistent exclusion or failure to achieve a degree of success in political decision making might lead to the development of feeling of apathy or fatalism which makes those individuals or groups accept demands or changes enforced on them by powerful actors. This is emphasised by Edmondson's (1997b) argument for the role of 'hope, optimism, fear and disillusionment' when assessing the emergence and success of collective action (p.4). Sometimes the powerless tend to rationalise their own weakness in order not to face the '*explicit* recognition of their own neglect and marginality' (Wynne, cited in Connelly and Smith, 1999, p.114 – 5). This is an important proposition to consider especially in cases where changes in PRS were introduced during the post-colonial development processes. The time lapse of five decades of fluid changing contexts would have affected all aspects of social process including those through which collective action was mobilised. Consistent oppression and lack of participation in decision-making processes may undermine political consciousness and fragment it, which explains why in some societies despite the "obvious" benefits of collective action, no such initiatives seem to be taking place.

II.7 Conclusion: A framework for understanding property rights systems as a social process

This chapter employed the six 'moments' of social process to investigate the underlying assumptions of different property rights systems as 'permanences' each with its inherent ideology, notions of individuality and collectivity, knowledge bases from which views on nature/human relations are derived, and inherent contradiction from which change and 'discontinuities' tend to emerge. The arguments of the chapter aimed to reveal that despite the possibility to propose a 'universal' definition for different PRS, each of those 'structures' are continuously subject to individual or collective 'agency' to either change how those systems operate or replace them with new systems. For example, although CPRs are based on cooperation, unequal power relations could be articulated to advantage an individual or a group on the account of the others. On the other hand, although private property is based on individualistic and competitive values, some individuals could act collectively to advance certain shared interests.

This emphasises that it is not possible to study conflict and change without the dialectic articulation between 'permanences' and 'discontinuities', the understanding of the 'universal' in its 'epistemological' contexts, and investigating the potentials and constraints of 'agency' to change 'structures'. Together, Chapters One and Two demonstrated how the 'moments' of social process could be employed for studying 'permanences', revealing 'discontinuities' and understanding the dialectic articulation between them. Each 'moment' could serve to construct 'permanences', reinforce 'structures', or be a place where conflict is articulated, action is taken and change is achieved. In epistemological studies, the 'moments' of social process could be employed to investigate the articulation of the 'universal' in specific contexts, such as the shift from one property right system to another: how are those changes shaped by existing socio-environmental conflicts and how they contribute to the shaping of those conflicts.

Following a poststructural political ecology approach, this study investigates the dynamics of socio-environmental conflict in the changing context of common pool resources, through a historical perspective using the 'moments' of social process. The changing water property right systems in Jordan, and the Jordan Valley in specific, are studied through the historical transformations of society and political economy as well as the ecology itself. The approach would give equal importance to all 'moments' of social process as entry points to understand the various turning points in the history of the management of water resources in Jordan. Although all the 'moments' exist simultaneously, they are of different characteristics and densities. Discourse is usually identified to have a core role in the dialectic of the other 'moments' because of its communicative nature. However, it does not necessarily have to be the entry point to investigating social process. While dominant discourse could reveal the characteristics of social constructs in one context, institutions might emerge as an entry point for understanding another. Thus, in order not to fall prey to using one 'moment' as a representative of a 'totality', all the 'moments' of the theoretical framework should be equally tested as an entry points to investigate: *property right systems* as 'permanences', processes of *change*, and *conflict* as inherent contradictions in PRS or as triggered resistance by their change.

The dialectic articulations of the 'moments' of social process, thus, will be used to investigate property rights systems, change and conflict as part of the historical and ecological transformations of the dynamics of social process. The historical context will be arranged around the turning points of water *property rights* in Jordan. The theoretical framework would allow the revelation of those systems as institutions, whether formal or informal, their articulation with each other, with existing power and social relations, with the prevailing values and beliefs, and with dominant discourse, and how they are manifested through material practices and particular land ownership patterns, all reflecting particular relation within nature. The social and political heterogeneity within social contexts would be explored revealing contradictions and *conflict*, which could be observed in outright forms of resistance, but also need to be investigated in its latent and unobservable forms. Although

change is an ongoing process, the specific changes to property right systems, as turning points, could provide the best entry point to investigate it as a social process. The 'moments' of social process would be employed to examine from which 'moments' change is triggered, through which 'moments' it is articulated, and within which 'moments' it is being manifested. This would not only reveal shifts from one PRS to another, but also the manipulation of prevailing PRS.

The next chapter unfolds the historical social, economic and political dynamics, which form the backdrop for the events of the past century, leading the way to an elaborate examination of the turning points within the historical and ecological transformations in the Jordan Valley in Chapter Four. The 'systems' and 'turning points' revealed in Chapters Three and Four will then be articulated through the 'epistemological' examination of the dynamics of socio-environmental conflict in the changing local and national contexts of common pool resources operating within changing supranational and global socio-economic context and environmental debate.

CHAPTER THREE

WATER ISSUES IN THE JORDANIAN CONTEXT

Introduction

As argued in the previous chapters, an epistemic approach allows us to investigate the processes that constitute certain 'permanences' and the contradictions which could affect those constructs and from which changes emerge. This approach can be applied to understand socio-environmental conflicts within specific socio-economic and political contexts. Social constructs including views of nature and PRS, are constantly changing through the historical transformations of society, political economy and ecology, which are intrinsic to the social process. Those contexts have an articulated relation with the 'moments' of social process, which are not only embedded within the locality of their contexts. They are also part of and influenced by the regional and national contexts in which that locality is situated. Thus, by understanding the overall historical and ecological context we would be unfolding how those contexts *shaped* and *have been shaped* by the 'moments' of social process. As this chapter provides a general understanding of the context in which this study is set, it also offers an entry point to understand some of the underlying facets of the 'moments' of the social process in Jordan and their influence on the Jordan Valley.

The chapter is structured in a manner that serves to understand the historical and ecological context of water issues in Jordan with reference, when relevant, to the Jordan Valley. The chapter commences by introducing Jordan as a political entity with its specific dynamic demography and moves on to discuss the geography of Jordan in the context of its demography. This would highlight the high profile which water has taken; as it was first constructed as a 'development' tool of political importance and how it gradually became defined as an environmental problem of a demographic dimension. The focus of this chapter would be to present a brief analysis of Jordan's water policy in the context of social change offering a preliminary schematic view of some of the observable poles of conflict over water resources at the Jordanian level beyond simplistic demographic answers.

III.1 The formation of Jordan as a modern state – *The newly established political entity and its dynamic demography*

Modern Jordan has a relatively short history that only extends over the past century. Nonetheless, Jordan as an inhabited domain goes as far back as the biblical times. This stretched since the times of agricultural communities in the Bronze Age, to the Ammonites in the Iron Age, to Hellenistic Control and Roman Order until the Islamic conquest in the 7th Century A.D (Peake, 1958).

Although most of the traces of early human settlements are found around water sources in the Valleys and the mountain heights (ibid.), Jordan was mostly inhabited by nomadic tribes that moved northwards in a slow migration from the Arab Peninsula (Beaumont *et al.*, 1988). Geographically, Jordan is part the *Fertile Crescent*, which stretches from the Persian Gulf in Iraq to the Mediterranean and up the Nile in Egypt (Dellapenna, 1996).

Jordan is a Middle Eastern country surrounded by Syria from the North, Saudi Arabia from the South, Israel and the West Bank from the West and Iraq and Saudi Arabia from the East (map III.1, p.78). The area that comprises Jordan today was, like most of the areas under the Islamic command, administed through a division of provinces – *wilayat*[1] - reporting to the *Khalifa*[2] in the Capital, which varied according to the ruling dynasty. It fell under the Ottoman rule in the 1516 along with Syria (including Lebanon), Iraq, Palestine, Egypt and Hijaz (north eastern Arabia). Although some historians contend that after the Ottoman conquest, Jordan's region was 'reduced to a mere outlying section forming the southern part of the *wilaya* of Damascus (Abujaber, 1989, p.4), others argue that in the period between 1516 – 1587, the sub-province (*Liwa'*) of *Ajloun*, which comprised most of the area of Jordan played an important economic and social role within the Province of Damascus (Bakhit and Hmoud, 1991). Regardless of the position of the area within the Ottoman Empire, the 400 years of Ottoman rule affected almost all social, economic and political relations within the area and its influence continued to prevail well after the creation of Jordan as a nation-state.

The establishment of Jordan and the circumstances surrounding the set up of its ruling family – *The Hashemites*, played a major role in the development of power and social relations within the Kingdom. In the hope of creating a Hashemite Arab Kingdom that would encompass all the Arab *mashriq* on the ruins of the Ottoman Empire, the Hashemites, with the support of Britain led an Arab Revolt against the Ottomans in 1916 (Susser, 1995). However, those ambitions were never realised in their original form. Following the fall of the Ottoman Empire, the French/British wartime treaty (Sykes – Picot) put Syria and Lebanon under the French Mandate, excluding the Hashemites from obtaining those territories. Palestine remained under the British mandate due to the British commitment to the Zionists to establish a national home for the Jews in its territory, leaving the Hashemites with Jordan and Iraq. Under the British mandate, Jordan was established as the Emirate of *Transjordan* in 1921, ruled by Prince Abdullah bin Al-Hussein (ibid.).

[1] *Wilayat:* Provinces.

[2] *Khalifa:* Arabic, the term used to refer to the person that follows Prophet Mohammed in the leadership of Muslims.

Map III.1: Jordan – Political Map

Source: Royal Geographic Centre of Jordan (1993)

The legitimacy of the Emirate was challenged due to its artificial borders and the fact that the ruling family was a 'foreigner' to the country as it originated from the Arab Peninsula. Nonetheless, with the support of Britain, the Hashemite family managed to minimise the domestic opposition through encouraging 'the formation of a loyal Transjordanian élite with a vested interest in the status quo; and transformed the traditionally rebellious Bedouin into the military backbone of the state' (ibid, p.5). Thus, despite the fact the Hashemites were urbanites originating from Mecca, 'Jordan has often been described as a Bedouin state ruled by a Bedouin leadership' (Bar, 1995, p.221). The Hashemite family courted the tribal chiefs and bestowed upon them various economic and political benefits. This loyalty was endangered by Bedouins nomadic way of life. This led to a policy of encouraging the

settlement of the tribes, who although were integrated with the urban and rural society did not give up most of their norms and practices. Tribal practices were institutionalised through the legal system, but a process of detribalisation started in 1972 by the abolishment of the tribal law (Jureidini and McLaurin, 1984). However, the introduction of civil law only served to reinforce the rule of the state in issues regarding security and law enforcement, minimising practices such as revenge. Otherwise, the role of the tribe and kinship remains a key facet of the Jordanians' social identity and practices.

Prince (later King) Abdullah also encouraged the formation of a Transjordanian élite consisting of the families, which had come to Transjordan with him from Hijaz or those who joined him upon his arrival to Jordan (Bar, 1995). The Transjordanian élite also included Syrian and Palestinian merchants who immigrated to urban centres during the period of Ottoman reform at the end of the 19th century, due to the stability offered by the new administrative structures and the new economic opportunities opened by the expansion of cultivated areas (Rogan, 2000). Many members of the Transjordanian élite served as advisors to the Prince holding highest political posts as advisors, ministers and Prime ministers. Descendants of this élite occupied the same positions later under the rule of King Hussein. Some are still occupying high-ranking positions under the rule of King Abdullah II, today. Members of the Jordanian élite also form a substantial part of the growing entrepreneurial segment of the contemporary Jordanian society.

Both the political rise of the Transjordanian élite and the transformation of the Bedouins into the backbone of the monarchy succeeded in keeping Jordan in a relative domestic tranquillity for more than 25 years. The Arab-Israeli war in 1948 and the following socio-political changes and disruptions characterising the last five decades of the 20th century have had a major impact on the demography of Jordan and its socio-political structures. The 1948 war, spurred by the unilateral establishment of the state of Israel, ended with the defeat of the Arabs and the *de facto* partitioning of Palestine. This has resulted with an influx of Palestinian refugees that started in 1948 and continued until the mid-1950s (Jureidini and McLaurin, 1984). The rapid population growth of Jordan from then was marked by a series of forced immigrations. Those included the Palestinian *refugees* of 1948 and the Palestinian *displaced* of 1967, following the Six-day war[3] as well as the 300,000 Jordanians and Palestinians *returnees* (World Bank, 1997), after the Gulf War in 1990. The Jordanian population increased from 586,200 to 4,291,000 between 1952 and 1995 (DoS, 1996).

Not only did the Palestinian influx contribute to the rapid urbanisation of Jordan and the growing pressure on its meagre natural and economic resources. It also contributed to a growing socio-political tension within the Jordanian society. The Jordanian – Palestinian relations started to become tensed in 1951, after the Jordanian annexation of the West Bank and the establishment of the Hashemite Kingdom of Jordan. This tension grew after the loss of the West Bank in 1967.

[3] 450,000 Palestinian refugees escaped to Jordan in 1948 and 400,000 in 1967 (World Bank, 1997).

Furthermore, the growing power of the Palestinian Liberation Organisation (PLO) and the subsequent civil war in 1970-1971 led to a growing distrust between the Palestinians and the Jordanians. Contrary to the situation of the Palestinians in all the other Arab states, the displaced Palestinians and refugees were offered the Jordanian citizenship enabling them to benefit from government educational and health services. It also facilitated their travel and work opportunities in other Arab countries, such as the Gulf States. The Palestinians regarded this gesture with distrust, as they perceived it as an attempt to absorb the Palestinian refugees. On the other hand, the Jordanians perceived this as a threat to the Jordanian entity and were worried of the encroachment of the Palestinians over Jordan.

It cannot be generalised that there is a historical mistrust between *all* the Jordanians and *all* the Palestinians. The Palestinian identity is heterogeneous: the affinity of Palestinians who grew as a *refugee* or a second-class citizen as a *displaced*[4] is different from those who rose outside the refugee camps or who are members of the Jordanian élite. However, despite the much-improved Jordanian/Palestinian socio-political relations in Jordan, the historical dimension of the tension still has its impact on the social process. In certain contexts the fact that a person comes from a Palestinian origin could affect his/hers reactions or assumptions as much as it could affect a Jordanian's reaction or assumptions towards him/her. The three prominent characteristics of the Jordanian entity: the role of the Bedouin tribes; the existence of the Jordanian élite and the volatile relations between the East Jordanians and the Jordanians of Palestinian origins played a major role in the socio-political history of Jordan and influenced its development process and shape in the past five decades.

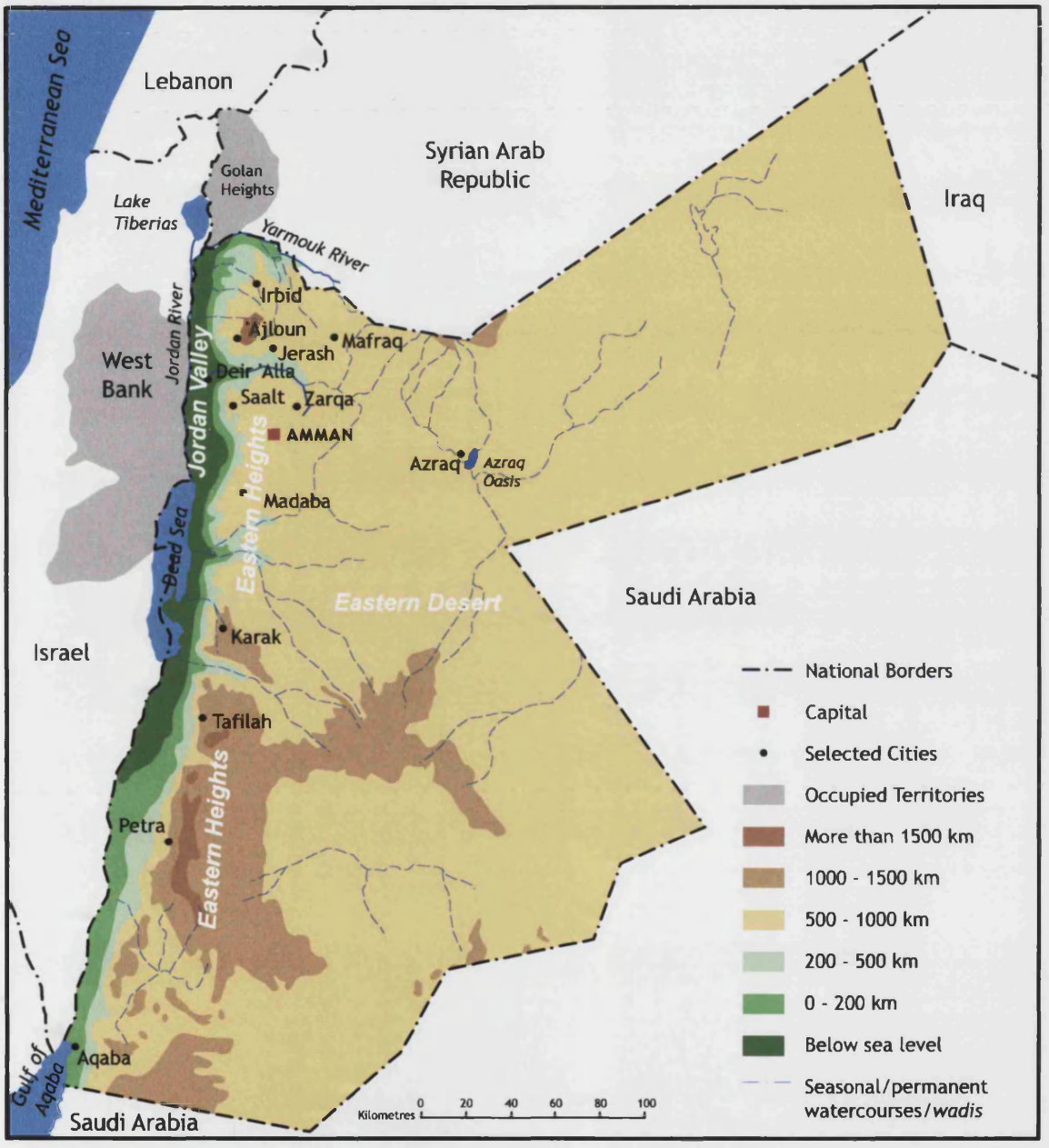
III.2 The geography of Jordan in the context of its demography

The total area of Jordan is 89,213 sq. km (CIA, 2001). Jordan has a diversified landscape and is divided into three physiographic regions: The Eastern desert (*Al-badia*), the Mountain Heights and the Jordan Valley (map III.2.a, p.81). The Eastern desert comprises three-fourths of Jordan's area and is less densely occupied by nomadic herders on the eastern desert borders (Kliot, 1994). The rainfall in the Eastern desert is characterised by intensity and short duration, which leads to torrential floods and stream run-off (MMRA&E and IUCN, 1991). To the west lie the Mountain Heights, which are called the Eastern Heights of the River Jordan basin (Kliot, 1994). Most of the Jordanian cities and towns are located on the Mountain Heights, which enjoy a moderate climate comparable to that of the Mediterranean with an average rainfall of 600 mm in its northern parts that decreases towards its southern parts to reach 100mm (map III.2.b, p.82). The Jordan Valley (*Al-Ghor*) occupies the length of the Rift Valley. Its lowest point has an elevation of 392 meters below sea level and

[4] The displaced Palestinians of 1967 were granted temporary Jordanian Passports, identified by their two-year expiration date. After the dissolution of administrative ties with the West Bank in 1988, all the Palestinian refugees were then given the choice between taking the full Jordanian Citizenship and giving it up altogether.

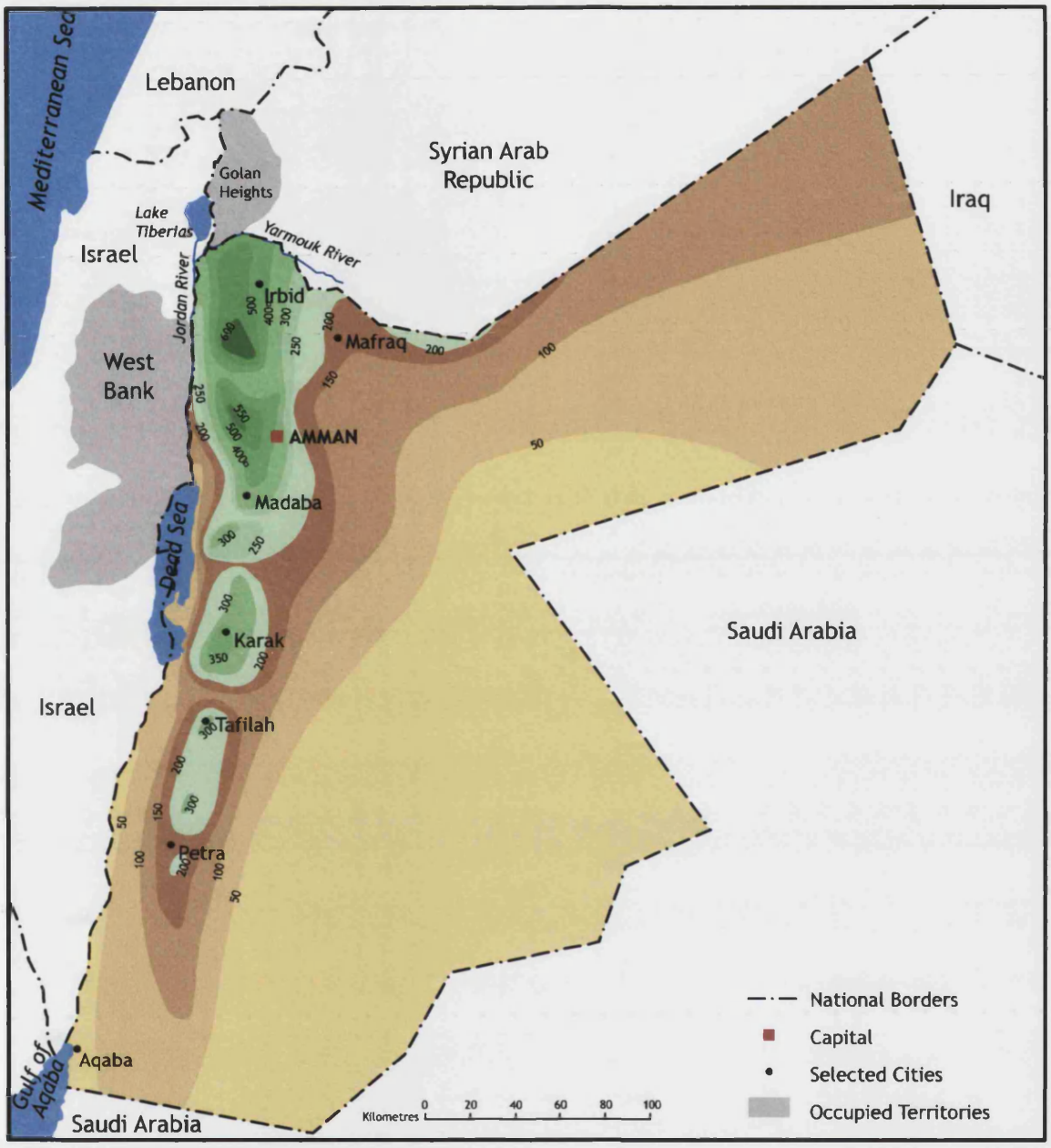
enjoys a semitropical climate. The Jordan River cuts through the northern part of the Valley ending in the Dead Sea. Jordan's climate is generally described as semi-arable. Rainfall has averaged 8520 Mm^3 over the period of 1937-1996, only 5.35% of this quantity trickles to groundwater reserves (WAJ, 1997a).

Map III.2.a: Jordan – Physical Map



Source: Royal Geographic Centre of Jordan (1993)

Map III.2.b: Jordan – Rainfall



Source: Royal Geographic Centre of Jordan (1993)

Until the middle nineteenth century, Jordan was mostly inhabited by nomadic tribes (Beaumont *et al.*, 1976). It was not until the Ottoman rule that settlement was encouraged. Circassian refugees from the Caucasus Mountains and some of the tribes started to settle and cultivate the land (Lavergne, 1997). By the time the Kingdom was established in 1948, the population of Jordan showed a threefold division into sedentary, semi-nomadic and fully nomadic groups (Beaumont *et al*, 1988). The sedentary mostly lived in towns and villages along Mountain Heights. Semi-nomadic people were organised in tribal groups and lived in tents around Amman and towards the southern part of the highlands. The Bedouins till then depended on their cattle and did not cultivate land. During the wet winter months they either moved eastward towards the desert or downwards towards the Jordan

Valley, while in summer they would move westwards and upwards towards the highlands (Beaumont *et al*, 1988). Early literature (Harris, 1958; Konikoff, 1943) also refers to the presence of a small number of outcast families in the Jordan Valley, some of which seem to be from Sudanese or Ethiopian origins. Harris (1958) argues that they are desedents from slaves that escaped from larger tribes in Egypt or Arabia. He believes that some of them engaged in nomad pastoralism, moving their flocks on an annual cycle according to the seasons, while the rest engaged in cheap labour. According to Harris (1958) the standard of living of this minority was extremely low and was often inferior to that of the refugees.

Konikoff (1943) argues that those minorities formed definite sub-sections in certain tribes. Some of them were brought into the country 'as slaves who had been purchased by pilgrims on their way to Mecca', (p.17) and were employed by the Prince Abdullah and a number of the Bedouin chiefs who regarded them as favourite servants and bodyguards. It is difficult to know whether both authors were talking about the same people, due to the fact the Valley is a long and diversified stretch of land and to the continuous movement of the tribes along the Valley in the beginnings of the 20th century. Nonetheless, it is certain that some tribes in the Jordan Valley owned slaves until at least the beginnings of the 20th century. Peake (1958), in his listing of the tribes of Jordan, refers to large families and rich tribes in the Valley and the clans attached to them, which he identifies as being the slaves of those tribes. Although slavery is now non-existent in Jordan, it is important to take this point into consideration when researching the social process within the Jordan Valley as the history of those families might influence their relations.

III.3 Water status in the development process of Jordan

Although the area comprising Jordan, today was under British mandate for three decades, it was not colonised in the true sense of the word, as it lacked the natural and human resources[5] to be exploited by colonial empires. Nonetheless, as an economically 'underdeveloped' country, it was influenced by the post-colonial hegemony of modernisation and 'development' theories- the process that took place against the *backdrop of the cold war* (Hoogvelt, 1997, p.35) characterised by cultural diffusion and the introduction of new technology. The process of modernisation, industrialisation and agricultural expansion, which developed into an export oriented activity during the oil boom in the Gulf countries, depended on foreign aid that left Jordan with the heavy burden of debt, which it is still struggling to pay back (CIA, 2001).

Early literature and documentation of Jordan's economic status refer to successful, yet traditional, agricultural practices by the rural population in both the Jordan Valley and the Mountain heights. Konikoff (1943) highlights the fact that cereals were exported to Palestine and Saudi Arabia, and its

[5] There is no consensus of the Jordanian population in the 1940s, but it was estimated by the Naval intelligence Division of the UK (cited in Beaumont *et al*, 1988) to be between 300,000 and 350,000.

quantities doubled between the years 1927 and 1939. Those were only grown in the winter and depended on the rainfall. Furthermore, irrigated vegetable gardens were grown in the Jordan Valley. They covered the requirements of the Jordanian population and the excess amounts were exported to Palestine. Vines and Olive trees were successfully grown and rainfed on the mountain heights (ibid.). Despite those exports, the Jordanian population was mostly dependent upon subsistence arable farming or nomadic pastoralism.

The rapid population growth and urbanisation[6], which was spurred in 1946 reaching 70.8% of the total population in 1995 (DoS, 1996), contributed to changing the form of agricultural practice in Jordan, which was already facing complex socio-political challenges. As the new 'Kingdom' was established during an unsettled period for the Middle East with the royal family still lacking stability, there was a need for immediate measures to feed the growing population, settle the Bedouins and gain loyalty. Intensified agricultural practice was encouraged; extensive irrigation projects were constructed in the Jordan Valley. In 1958, Jordan decided to implement the first stage of its East *Ghor* Canal (EGC) to divert the waters of *Yarmouk* River, the main tributary of Jordan, to the Jordan Valley. Most of the Canal was constructed between 1958 and 1963, although its construction continued over an intermitted periods of time until 1978. By then, the project had brought 218,000 donums[7] under full irrigation. Today, the Jordan Valley irrigation is largely dependent on surface water, although underground water is being utilised towards the southern drier parts of the Valley (Natur, 1985).

Private ground water development also gained momentum in the 1950s and 1960s (Natur, 1985). Licenses for well digging to exploit groundwater resources were granted generously in the highlands, which hitherto were rainfed only. While irrigation in the highlands is dependent on the renewable northern aquifers, desert agriculture depends on the non-renewable southern aquifers. In 1989, agriculture accounted for 79% of the total national water consumption, while in 1994, it directly accounted for 8% of GDP and directly employed 10% of the total national labour force. However, 28% of the GDP and 24% of employment was, then, dependent on agriculture (World Bank, 1997). Policy papers are critical of the current agricultural practice and use of water resources, which are considered inefficient as well as economically non-viable.

Until the Gulf war of 1991, Jordan had a rentier economy[8], which brought in capital into the country. While individually held capital was mainly invested in property, the government and the Jordanian

[6] 'Urban' includes localities of (5000) population or more as were defined in 1979 (DoS, 1996, p.12).

[7] 1 donum = 1,000 sq.m = 0.1 ha

[8] The economy of states that depend on external sources of income rather than internal production processes and taxation. Since the late 1950s, the income of Jordan has been heavily dependent on expatriate worker remittances and foreign aid (Brand, 1992).

banks which held the savings of the Jordanian expatriates invested in industrialisation, spurred by the oil boom in the Gulf countries in the late 1960s and early 1970s. Most major industries such as mining were held by publicly traded companies[9], but were largely owned by the government[10], which was responsible for their management and decision-making. Industries were given special licences to dig wells to exploit underground water for manufacturing and mining purposes. Although the manufacturing sector accounts for only 1% of total national water consumption, its contribution to the degradation of water quality is a growing concern in Jordan. Chemical and tanning industries are concentrated on the sides of *Zarqa* River, where they dump their waste, mostly untreated. The River does not only irrigate vegetable gardens on its banks. Its water is also stored in King Talal Reservoir, which is released during the summer months into the EGC that irrigates the central and southern parts of the Jordan Valley, the principle agricultural region of Jordan (Lavergne, 1997; AMDP, 1996; and Khaza'eleh, 1995). Further south on the East Bank of the Dead Sea (*Safi*), Potash is being exploited from the Dead Sea. Although at the national level, industry is not a large consumer of water, at the local level, as in the case of the Potash Company, water in *Safi* is appropriated by the company, which controls the amount of surface water released for agricultural practices in the area.

Municipal demand of water resources has been growing over the years, accounting, today, for 29% of water consumption in Jordan (WAJ, 1997a). Due to the growing shortages in water resources, urban demand is not being met. Since 1988, delivery of municipal water has been rationed by rotating supplies and providing intermittent services almost 8 months of the year. Water is supposed to be delivered twice a week[11] to all areas. However, due to problems in the network, some communities find themselves without water for two weeks. Some argue that the system is inequitable. Most houses invest in roof storage tanks and in ground storage tanks. Those who can afford it, buy water from private water tankers or those operated by the water authority. Meeting the industrial and municipal demand is costly due to the fact that most demand is concentrated in the highlands where there are no water resources, which incurs a cost for the purpose of delivery.

Water sector policy papers and studies in Jordan favour investment towards meeting municipal and industrial water demand. '[T]he high value added to water by its industrial use economically justifies the full satisfaction of industrial water demand as the highest priority' and 'municipal projects are economically justified' (World Bank, 1997, pp.18-9). In 1995, 74% of the municipal and industrial demand was supplied from the renewable northern aquifers, while 26% was diverted from *Yarmouk* River in the north of Jordan, a major tributary of the Jordan River, which accounts for almost 20%

[9] The Jordanian élite held shares in those companies through their own companies or as holders of shares in the banks investing in those industries.

[10] Examples include: The Potash Company, the Jordan Phosphate Mines Company, Jordan Cement Company, and Jordan Tanning Company (Brand, 1992).

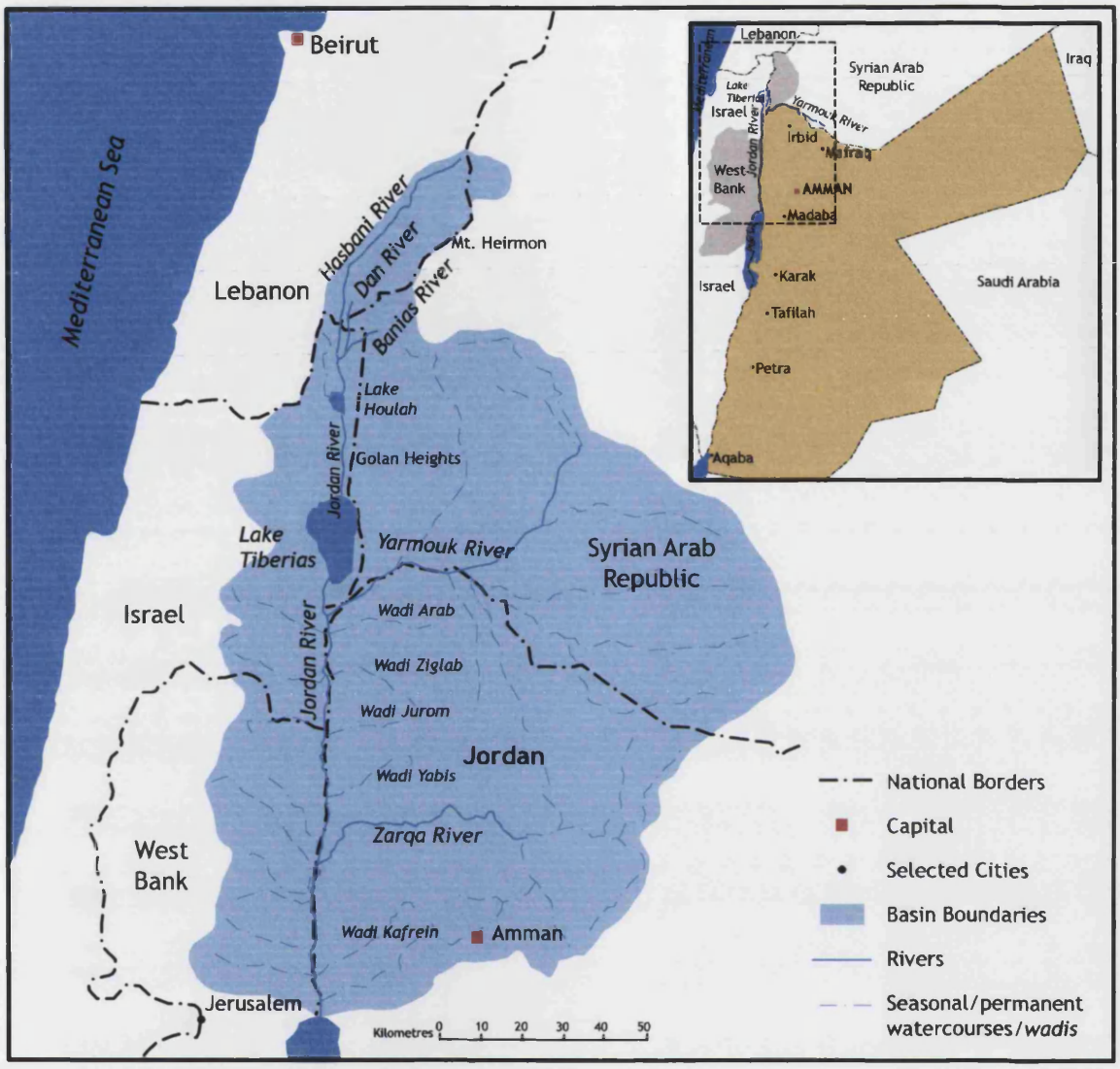
[11] During the exploratory fieldwork, water was distributed once a week (June –August 2000).

of the surface water in the Jordan Valley. Treated waste water discharged from municipal and industrial use was diverted to King Talal Dam to be used for irrigation in the Jordan Valley, accounting for 14% of the irrigation water there (World Bank, 1997). The increase of use of treated wastewater for irrigation is being encouraged in policy papers, as well as an increase in the supply of water for municipal and industrial.

Water scarcity in Jordan has been recognised since the 1970s (MWI, 1997b), but due to the population growth pressure, the need to expand agricultural land and the need for economic development, this problem was not addressed in a comprehensive manner. The government's objectives then were to maintain a continuous supply of water to ensure the political, economic and social stability. A World Bank report on the water sector in Jordan describes the management of water resources in Jordan as characterised by meeting the demand through expanding the supply of water resources rather than managing the demand itself (1997). The prospect of meeting the demand of water resources is rather complex and uneasily achievable. The complexity of the issue is discussed in the chapters allocated for the research findings. However, at this stage, it can be argued that management of water resources in Jordan is characterised by most of the interviewees as being over-exploitative. Today, water is recognised as one of the top environmental issues in Jordan, suffering scarcity and pollution, which aggravate each other. With 200 m^3 available per capita in 1995, Jordan's supply fell 80% short of the globally accepted minimum of 1,000 m^3 per capita (MMRA&E and MP, 1995). Studies reveal that the estimated deficit between demand and supply would reach the total of 238 Million Cubic Metre (MCM) in 2005 (World Bank, 1997, p.17). The problem is further complicated by the fact that large quantities of water are lost through the supply process.

The political changes in the recent years (peace with Israel and development of Syrian-Jordanian relations) are promising a rise in Jordan's share of international waters of the Jordan River basin. Lebanon, Syria, Israel, Palestine and Jordan share the Jordan River basin. It starts at the foot of Mount Hemon from three main sources, *Hasbani* in Lebanon, *Dan* in Israel, and *Banias* in Syria, which converge into the united Jordan River in Israel and the Syrian occupied territories. It flows then into *Huleh* Basin and plunges into Lake Tiberias and continues its flow along the Jordan Valley to end in the Dead Sea in the South (Hillel, 1994). The Jordan River has two main tributaries: the *Yarmouk* River shared by Jordan and Syria, and the *Zarka* River in Jordan (Map III.3, p.87). For the past six decades, the basin was subjected to the unilateral projects implemented by each country without co-operation with the others. Although the political changes and the upcoming joint projects with Syria imply a substantial increase of the annual available water resources, policy papers and experts insist that it needs to be coupled with 'efficient' forms of management for those resources.

Map III.3: Jordan River Basin



Source: Biswas *et al.* (1997)

The prevalent opinion of local experts on the problems of the Jordanian water sector and their contribution to the degradation of water quality and quantity are focused on managerial and technical concerns. Those included: inappropriate institutional arrangements, under-pricing of O&M costs, lack of political will and courage to take drastic measures and strategic changes, lack of clarity of water rights, and the high percentage of unaccounted for (UAF) water loss. Indeed, those assessments are mainly derived from World Bank water sector policy papers, typical of the 1980s and 1990s, which were gearing water policy towards privatisation, the 'adjustment' of water tariffs and the enclosure of any remaining 'commons'. The approach de-politicised the water sector and overlooked issues of conflict, unequal power relations and the complex cultural, historical, legal and religious contexts, through which water is being articulated.

III.4 Jordan water policy and social change – *poles of socio-environmental conflict at the national level*

Water quality, quantity and distribution are on the top of the Jordanian government agenda. No day passes, without a report, resourced by the Ministry of Water and Irrigation (MoWI), mentioning water problems, policies and strategies appearing in the media. This has been further apparent after the recurring number of violent resistance actions against government officials and 'illegal' access to water resources. A major water pollution occurrence in July 1998 also had a significant impact on political practice in Jordan, as the Minister of Water and Irrigation was forced to resign for the first time in the Jordanian political history. The Jordanian government is now more committed than ever to find a solution to the water problem. Human, technical and financial resources are being allocated to address the problem. The government's rational towards the management of water resources remains located within the quest for economic growth and the efficient distribution of water resources, which is lacking in regards of the political and cultural considerations. The nomadic nature of the Jordanian society up until the 1920s has implications on the organisational basis of the society in terms of its social, political and productive practices. Water has been understood, defined and dealt with through the different influences on that society. Religious beliefs, traditional practices, social relations and power relations have all played a role in different forms of water property regimes within the Jordanian society. Those regimes did not have single format. Due to the different sources and influences on the Jordanian society and the changing format of the nomadic communities within it, different forms of property rights have been adopted to manage different sources of water in Jordan.

As the Jordanian society started to undergo modernisation and urbanisation processes, it became more diversified in nature. Not only has a highly urbanised community emerged, but nomadic communities changed in nature as well. This change is not a linear process and cannot be traced to one influence. It is a combination of a change in living practices, a change in the impact of inherited social and cultural basis of those practices, the changing dynamics of social and power relations, and the emergent role of the state among other things. Jordanian policy makers, mostly because of the complexity of the issue, have overlooked all of the above. This research aims to look at how changing socio-political organisation of the Jordanian society is part of the conflict over water resources and consequently the changing form of water management regimes in a rapidly growing scarcity problem. Its goal is to look beyond the conventional technical approach to water problems and highlight a broader understanding of the complex and the dynamic nature of socio-environmental conflicts in the changing contexts of common pool resources.

For this purpose, it would be helpful to draw a preliminary map of the current different poles of conflict regarding the management of water resources in Jordan. Following is a brief summary of the multiple discourses identified as existing within the Jordanian society regarding rights to and

responsibilities towards water resources[12]. Those conflicts reflect broader socio-economic and political forces that the official discourse overlooks or chooses to overlook in its definition of the water problem and consequently in its approach to policy making in that regard. In a previous research those conflicts were identified as '... five examples of conflicting interests and power relations affecting the water problem's definition and development' (Nims, 1998). With development and some editing, this research builds on those examples for the purpose of identifying socio-environmental conflict in the changing context of common pool resources. Thus, due to further theoretical development of the work, the examples increased to six and are identified as *poles* of socio-environmental conflict.

It is important to note that those poles of conflict are not isolated but rather overlapping and inter-relational. Actors identifying themselves in one camp could be present in more than one. More importantly although the poles of conflict are offered here in a form of one group versus the other, groups should not be assumed to be homogenous; thus, more complex forms of conflict could be present within them. Thus, this map does not represent the socio-environmental conflict over water resources, but rather offers an 'opening line' for the research and calls for further and deeper investigation[13]. The six poles of conflict are: The conventional privileged vs. small farmers, regional conflict within the Jordan Valley, state's power vs. the tribes' power, urban vs. rural tensions, the rich vs. the poor and the state's responsibility and users' disappointment. Following is a brief analysis of how one group identifies itself as a victim of the 'other', how they sometimes identify their own power, and how is that consequently reflected in their socio-environmental practice in terms of water resources.

Conventional privileged vs. small farmers

The conventional privileged includes members of the Jordanian élite who are involved in manufacturing practices and/or large entrepreneurial agricultural practices. Although the industrial sector and the agricultural sector are competing sectors, the Jordanian élite who are investing in those 'opposing' sectors seem to meet in their criticism of the small farming practices, which they believe do not use irrigation water efficiently and are not economically viable. Although industry is not a large consumer of water, it is a source of pollution. In cases when industry is located in areas suffering severe water scarcity and given exclusive rights to surface water, as in the case of Potash Company in the Southern Jordan Valley (SJV), it is perceived as a major contributor to water scarcity in the area. Due to the high economic return on its water consumption, industry is considered one of

[12] The section is partially based on the author's research in 1998, documented in the Masters dissertation entitled, 'The social perception of water problems in Jordan: exploring the social constructionist theory'.

[13] Although some of those "poles" are present within the Jordan Valley, they are not exhaustive. Those are explored elaborately in the following chapters.

the most powerful sectors[14] in Jordan. It enjoys the state's support as well as the support of the development aid agencies (World Bank, 1997). The fact that industries are conceived to enjoy power and privilege at a national level is contributing to small farmers' feelings of being disadvantaged. This in many cases is used to justify forms of resistance whether overt or covert in the form of 'illegal' access to water. Since the early 1980s, small farmers who cultivated vegetables on the sides of *Zarka* River suffered annual losses due to the damage of their products, which the government had to destroy. Although the media raised the issue almost annually, no significant measures in industrial environmental management have been taken. The *Zarka* River water is considered unfit for irrigation of vegetables that are eaten raw, and all the small farmers who survived on their practice by the river lost their main source of income and subsistence.

Large landowners, whether from the Jordanian élite or tribes, are also considered privileged. Small farmers feel disadvantaged in comparison to them, as they perceive them to enjoy access to power due to their connections with the monarchy or by being powerful politicians or financial tycoons. This suggestion could rarely be proved by documentation. The conventional privileged whether in industry or agriculture are believed to be enjoying the benefit of water resources for the development of their own interests on the account of farmers' livelihoods. Consequently, farmers tend to perceive them as ones responsible for the water scarcity problem in Jordan, while they are forced to bear its costs by receiving rationalised quantities of water, which is affecting their crops. Entrepreneurs whether in agricultural practice or industry share the same values in terms of the need to gear the economy towards liberalisation and large investments. They believe that small farmers are nuisance to the agricultural sector; because they are unable to produce the quality or quantity of agricultural crops for export purposes. As the water scarcity figures got more severe, the agricultural sector's high consumption of water resources is the most discussed and criticised issue by economic and water experts in the media. However, there are also some voices that try to call the attention to the impact of the late 1990s policy shift towards industry and large high-return agricultural practices on the livelihoods of small farmers.

Regional conflict within the Jordan Valley

It is publicly known that the irrigation water of the NJV is better quality than that of the central Jordan Valley (CJV). This is because EGC water source in the North is the *Yarmouk* River, but it gets mixed in the CJV with the low quality water of King Talal dam, which receives the inefficiently treated water of *Zarka* River. The farmers of CJV, who are predominantly from the Jordanian élite resent the fact that the farmers of the NJV receive better quality water, regardless of their social position. This is because they perceive themselves as the modernised entrepreneurial farmers who deserve to access best quality water for their state-of-the-art farms. The government, however, is

[14] Transport, industrial activities, construction and mining accounted for 54 % of the GDP in 1986 (MoP, 1997).

turning a blind eye to the underground water wells dug by the farmers of the CJV and SJV, which is resented, by the farmers of the NJV, who argue that the government is more lenient with the Jordanian élite of the CJV and the banana cultivators of the powerful *Idwan* tribe in the SJV. It should be noted that although the conflict is geographically based, it is manifested in the resentment of the state's services and planning rather than an overt conflict towards the residents and farmers of each area.

The state's power vs. the tribes' power

As mentioned above, the Jordanian monarchy has led a rocky path to gain its stability since its establishment in 1921. The late King Hussein, who ruled Jordan from 1952 to 1999, managed to maintain the support of the army and the Jordanian tribes, which ensured the continuity of the rule of the Hashemites. The Jordanian government avoids pushing Jordanian tribes too far especially those of them whose livelihoods are mainly dependent on agricultural and pastoral activities. This has been changing in the past few years, partially because the Establishment seems to be secure in its position in the Jordanian society and more specifically since the water problem became too acute to ignore. Farmers, in both the Jordan Valley and Eastern Desert, have tended over the years to dig their own underground water wells to supply themselves with water needed for their use, their cattle's and irrigation. Owners of private wells are also trading in water, especially after the rationalising policy has been adopted. Underground water wells were sometimes licensed and taxed, but in many other times they were simply overlooked by the government.

The conflict between the state's power and that of the tribe became evident every time the MoWI tried to enforce the underground water extraction law. As the water problem exacerbated in the recent years, the MoWI attempted at different times to close down unlicensed wells, or to stop giving new licenses for water extraction. Regardless of the size of their farms, farmers protested against the policy and refused to comply with it. The conflict was overt and sometimes became violent. When the government required that a meter should be installed to monitor water use, farmers of tribal origins simply refused. In some cases, they would deny the Ministry's employees entry to their farms by use of weapons. Although unannounced, the farmers seem to be aware of their own power within the system, which they derive from historically inherited practices and traditions related to Islam and nomadism. Those beliefs and practices are not easily shaken and the increasing role of the state and shifts towards the privatisation of some state-run institutions are seen as challenging long practised beliefs and values, material practices and institutions. Some independent experts criticise the weakness of the government in the face of the powerful tribes. Some tabloids tended to publish the names of all the owners of unlicensed underground water wells, to expose the government's courtship of the tribes and ex-government officials, as well.

Urban vs. rural tensions

Considering that 79% of available water is consumed by agriculture and 20% is domestically consumed, 37% of which is consumed by Amman the capital, it is only natural that urban-rural tensions surface in the water debate. The perception of water problem in Jordan from an urban point of view could be described as the opposite of that of the rural one. Rural and periurban areas regard Amman, as one of the major consumers of water in Jordan disregarding the fact that domestic use is not the major consumer of water in the country. Rural and periurban dwellers resent the fact that they are the ones who are bearing the costs of the problem by conservation policies. Water is still culturally perceived as territorial resource, and thus dwellers of *Al-Azraq* and the Jordan Valley fail to see the logic of giving 'their' water to other area. On the other hand, those living in urban areas perceive economic activities in urban areas as more feasible than those of agriculture. Not only do they perceive agriculture as a large consumer. They also believe that urban areas are subsidising for water consumption through the high tariffs they pay, in comparison to that of other municipalities. Cutting down the agriculture's water share and turning to importation of water consuming crops has become central to the 'Urban' rhetoric in the water problem debate.

The rich vs. the poor

Groups of different incomes have different access to power, material practices and social relations. They identify themselves with different social institutions and have different values and aspirations. Perceiving themselves through these differences, members of lower-income groups find themselves in conflict with those of high-income groups, who in turn see their highly consumerist life-styles as a right granted to them by their income. While rich people do not see themselves in conflict with the poor, the poor believe the affluent have means to adapt to the increase of water tariff and manipulate rationalisation, especially those in influential political and economic positions. Some could have more access to water resources through unofficial provision or by their ability to buy water from private providers. The power of being rich is also derived from the fact that their businesses are sources of foreign currency to a striving economy. Thus, the poor resentment of the affluent extends beyond their ability to access more domestic water, but also as industrialists causing the pollution of irrigation water resources and as large landowners with privileged access to irrigation water. This conflict is not widely discussed in the media or attended to in policy papers. However, some MP's questioned the impact of the privatisation of the operation and maintenance (O&M) and the distribution of municipal and industrial water resources in Amman in 1999 on poor households and underprivileged areas.

The state's responsibility vs. users' disappointment

Bryant and Bailey (1997) discussed the conflicting role of the state as a 'developer' and a 'protector'. In Jordanian water sector, the state's role is a combination of both, in addition to being a 'supplier'. The general tendency within the Jordanian society is of disappointment by the state's failure to fulfil

any of its three roles. The continued focus on economic 'development', through mining, industry and agriculture, on the account of strategic water planning, has failed to even achieve economic stability in the country, which is still suffering recession, poverty[15] and unemployment[16], and the pressure of foreign debt. Under such circumstances different actors within the society perceive the state as a major contributor to the water problem. Indeed, the introduction of piped water has brought with it a comfortable way of life for those who suffered the need to carry water from distant sources to their homes, especially women. The increasing water scarcity, the irregularity of water provision, the decreasing quality of water resources, the increase of water tariffs and the deteriorating water networks status are all contributing to the dissatisfaction of all production sectors and domestic users, regardless of their social positioning, with the state services. People are losing their faith and trust in their service provider, which affects their acceptance of water policies introduced by the state.

Of all the above five examples of poles of conflict over issues of water quality, quantity and allocation in the Jordanian water policy, those relating to the state and its failure to manage water resources or achieve economic growth were the ones formed and used by multilateral financial institutions to pressure the Jordanian government to make 'painful' concessions if it wished to continue receiving financial aid. Structural Adjustment was tied to guarantees for the refinancing of Jordan's growing debt to the IMF and the World Bank. The water sector had been one of the sectors under the scrutiny of the World Bank and USAID sine the mid 1980s. The inappropriate institutional arrangements, high percentage of UAF, the under-pricing of water and the lack of the political will to face tribal power were all used as justification for the call for water sector 'reform'. With a focus on economic growth increasing, the tension between the conventional privileged and the small farmers was also employed to criticise small inefficient agricultural practices. What initially started as a call for water tariff reform, improvement of water networks and administrative reform shifted in the 1990s to a call for a partial privatisation of the water sector.

As prevailing at the global level, Jordan ventured into a process of privatisation of public services and utilities. Water management privatisation started in 1999 at what could be considered the easiest entry level that is the operation O&M of municipal and industrial water distribution in Amman. Indeed, this does not imply that such transition is easy in Amman. However, it can be argued that since Amman represents the urban face of Jordan and inhabits almost all of its modernisation and globalisation crusaders, its pioneer privatisation entrepreneurs and its élite, privatisation of water management there seemed to pose the least conflicts and complications. Although it is too early to assess the process, so far the underprivileged Amman areas' consumers are still critical of the private company level of services. The introduction of customer service department and the rehabilitation of

[15] 30% of the population are below the poverty line (1998 estimate, CIA, 2001)

[16] The official unemployment rate in Jordan is 15%, while the actual rate was estimated in 1999 to be 25%-30% (CIA, 2001).

service offices gave a better image of the service provider. However, consumers do not believe that the service provided by the private company justifies the increase in water tariff; especially that it has not been met by sufficient rehabilitation of the water network in their area or the improvement of water provision. Although this is not central to the conflict within the Jordan Valley, the process has opened up a discussion about the privatisation of JVA, which has been responsible for the management of water resources in the Jordan Valley since the construction of EGC. The rhetoric and debate of privatisation is becoming part of the dynamics of socio-environmental conflict in the JV and will be further discussed in Chapter Eight.

III.5 Conclusion: State rise and fall in the context of water management

This chapter provided an understanding of the national and regional socio-economic and political contexts in which the dynamics of socio-environmental conflict over water resources in Jordan are set. The socio-political history of modern Jordan is as much a result of wider, deeper and 'older' historical and ecological contexts as it is an expression and reinforcement of the current social processes through which the dynamics of socio-environmental conflict over water resources are articulated. The chapter traced the historical context of water sector in Jordan through the history of the formation of a modern state, its rising role state as a manager of water resources in the 1950s and its demise in the 1990s.

However, the poles of conflict introduced in the chapter reveal how the role of the state is articulated through broader contexts of socio-environmental conflict. As any other actor, the state could play a role in the articulation of the socio-environmental conflict. However, the centrality of the role of the state in the debate on the management of water resources could conceal the broader contexts through which the conflict is articulated. The diversity of actors involved in those conflicts could manipulate, undermine or reinforce the role of the state within those contexts and need to be investigated in order to understand the dynamics of socio-environmental conflicts within the changing contexts of common pool resources. The changing role of the state should help to outline the turning points of the management of water resources in the Jordan Valley, but it also needs be positioned within the wider contexts of conflict in relation to the changing diversity of actors involved in the social process. This will be clarified in the following chapter, which provides an analytical account of the articulation of the management of water resources within the changing historical and socio-political contexts in the Jordan Valley since the Ottoman rule to the present day.

CHAPTER FOUR

THE TURNING POINTS OF WATER MANAGEMENT IN THE JORDAN VALLEY

Socio-ecological contexts, historical influences and modernisation processes

Introduction

This chapter provides an understanding of the historical and ecological contexts within which land and water management in the Jordan Valley (JV) evolved. It commences with an introduction of the Jordan Valley as a river system characterised by diversified ecological identity, which gives the different parts of the Valley their specific character and dynamics towards the changing contexts of the past two centuries. The discussion gives a historical account of the main characteristics of the Ottoman rule in order to develop some assumptions about the socio-political and socio-economic outcomes of the interactions between those characteristics and the social conditions within the Valley. It also presents the population movements and tribal history in the Valley during the Ottoman rule as well as those major demographic changes that took place in the period leading up to the construction of the canal. This would serve to understand the ecological, social and historical contexts in order to frame the backdrop in which the history of land and water rights in the Jordan Valley has taken place.

The chapter then moves on to present an account of the history of land and water rights in the JV, which could be divided into three main categories. The first unfolds the three premises of traditional access to and control of water and land resources: Islamic laws, customary practices and the Ottoman code; the second highlights the main legal institutions for the management of land and water after the establishment of Jordan as a nation state and finally the third presents the legal and institutional structures introduced to the JV since the establishment of East *Ghor* Canal to the present day. This will include a discussion of laws and regulations introduced at the national level, which are presented in this chapter in order to make a specific reference on when and how did those interventions affect land and water property rights in the Valley, especially as some of them are specific to the EGC project and its associated authorities. The chapter concludes with an outline of the major turning points of the management of irrigation water resources in the JV: the pre-'development' era, the construction of the canal period, the integrated development period and the present day characterised by economic liberalisation processes which started in the late 1980s.

IV.1 The ecological diversity of the Jordan Valley – *Episodes of abundance and scarcity*

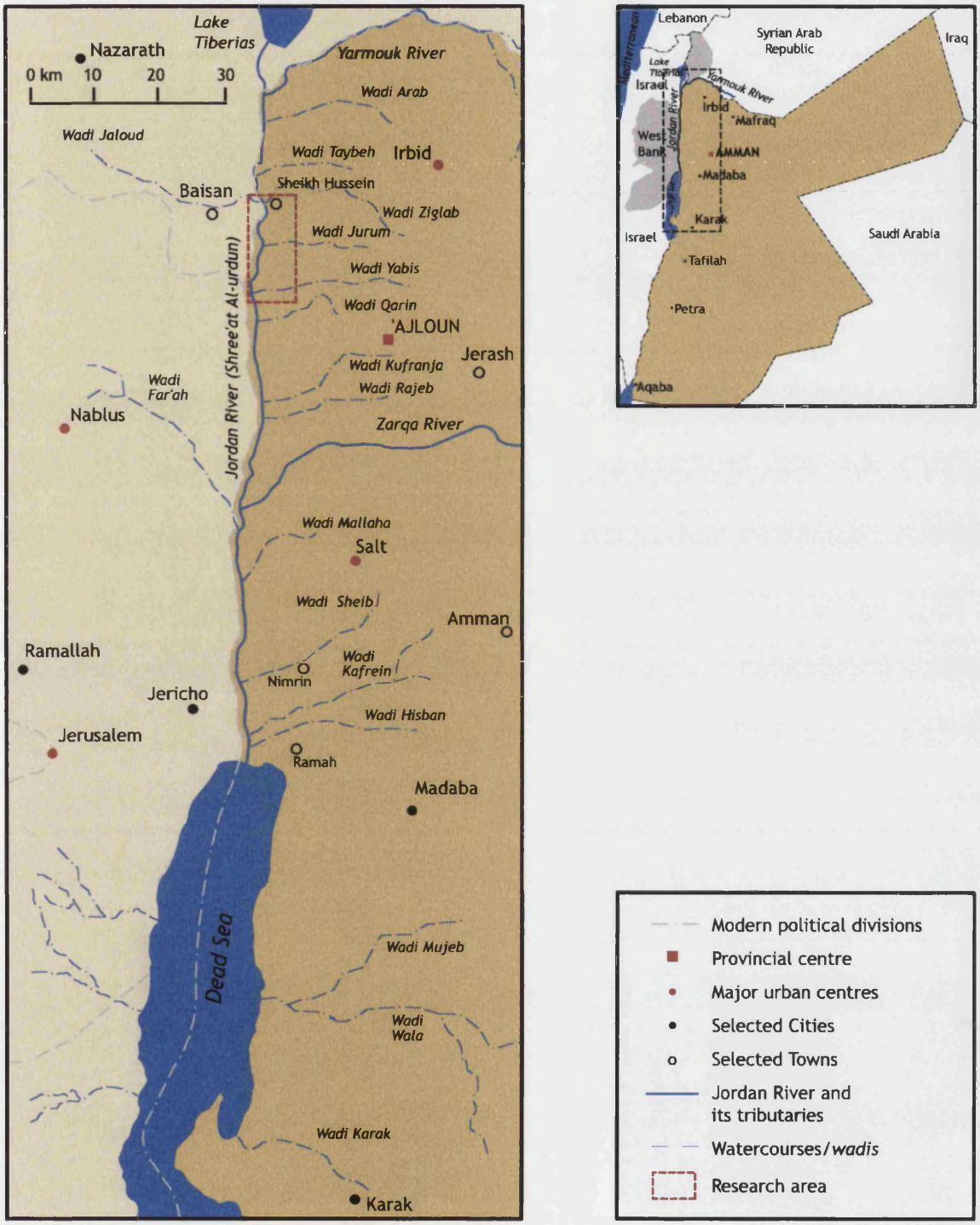
The Jordan Valley is part of the gigantic rift system that extends from southern Anatolia southward through the Beqqa' Valley in Lebanon, into the Jordan Valley, towards the Red Sea and into East Africa (Hillel, 1994). The term Jordan Valley often refers to the Valley, which occupies the length of the rift along the western borders of Jordan. This thesis uses the term in its traditional sense, which describes the valley through which the Jordan River runs, from Lake *Tiberias* to the Dead Sea focusing on its east bank where the research has taken place. The Jordan Valley is approximately 105 kilometres long (Kareem, 2000) and has a descending nature. The Valley falls from 212 m. under sea level at Lake Tiberias to 392 m. under sea level at the Dead Sea. This dramatic geology of the valley is the reason behind its somewhat tropical nature and the diversity of its climate. The Valley enjoys moderate winter temperature, which increases drastically in summer. As the elevation of the Valley drops, rainfall drops from 350mm in its north to 100mm at its southern end. Summer temperatures reach 37 degrees in the north and could exceed 40 in the south. The streams, which flow from the mountain hills, rush through the valley creating the Jordan River and the Dead Sea (Hillel, 1994).

The flood plain – *Zor* – , which the Jordan River flows through, is a narrow strip of land that does not exceed 1000m width (Kareem, 2000). Archaeological and geological studies in *Sheikh Hussein* region demonstrate that the region, was part of Lake Baisan between the 3rd and 7th millennia BC, and was well cultivated during the Islamic periods (ibid). The main part of the Jordan Valley – *the ghor* –is separated from the flood plain by a series of small hills called *kathar*. Kareem (2000) argues that only those parts of the *ghor* and *kathar*, which were watered by the *wadis* –runoff hills- and/or springs, were cultivated before the 1960s due to the scanty rainfall. This should not be taken as minimal as there is three *wadi*'s flooding across the 23 Kilometres strip of the research area alone, in addition to the various documented springs. Before the modern developments on the Jordan River, it had two main tributaries; the *Yarmouk* in the northern part and *Zarka* in the central part, in addition to 11 secondary tributaries called *Wadis*. They are *'Arab, Taybeh, Ziqlab, Jurum, Yabis, Kufranjah* and *Rajeb* north of the *Zarka*, and *Malha, Shu'eib, Kufrin* and *Hisban* to its south (Map IV.1, p.97).

The presence of those Valleys encouraged settlement and cultivation around them since ancient times. The diversity of the climate between the northern section of the valley and its south was reflected in the level of settlement and cultivation (Kareem, 2000). Evidence of settlement and agricultural production dating back to the 12th century demonstrate that new villages were found around *Wadi Al-Yabis* and *Wadi Al-Zarka* (ibid.). The 4th statement of the Palestine Exploration Society in 1877 argues that, contrary to accounts that represented the valley as an unproductive desert, the expedition came across vast areas of 'fine wheat fields' between Lake *Tiberias* and *Zarka* River (p.79). However, below that extending to *Nimrin* Valley the area is a real desert. In 1877, the Palestine expedition came across 'no less than eleven living streams [in the north], more than half of

which can be called large ones [which] flow from the hills to water the plain' using a vast system of canals in all directions to irrigate the wide areas of wheat fields (p.79).

Map IV.1: The Jordan River Valley and its tributaries



Source: Bakhit and Hamoud (1991)

The description of the Valley by European travellers varied according to the time of the year they travelled and the part of the Valley they crossed. The long hot summer used to leave the valley in a dry thirsty state, which is quenched by the first rains of November and December. The River flow

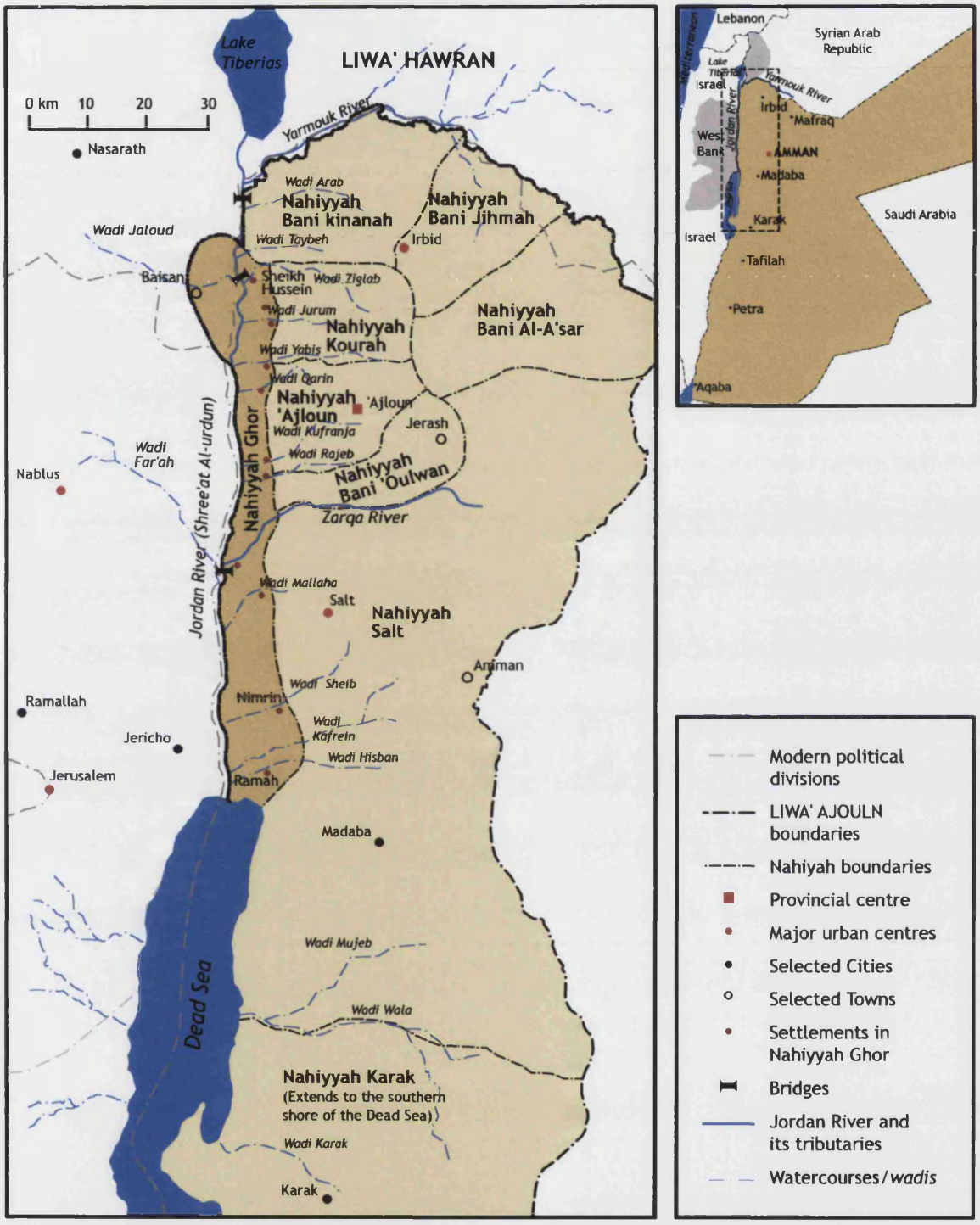
would rise during the following months due to the rain and from the flow, which comes from Lake Tiberias. This temporary abundance of water resulted with the lush wheat fields observed in the area during the spring time, which is followed by the long hot summer by which end the river reaches its lowest levels. *Forbidden Paths in the Land of Og* (1900) describes the Jordan River to have three banks: The lowest one, -the true channel of the river, -is narrow and sunk far below the surrounding level, which is its fall and winter course. The next bank consists of soft, sedimentary deposit, which confines the river in its fuller course. 'When the hot sun of late spring and summer melts the snows of Hermon, the river swells to its greatest proportions and often rises to the level of the third bank, which is lined with trees, bushes and undergrowth' (pp.216-7).

The ecological diversity of the Jordan River reflects discontinuity along its length in terms of geographical association. The different parts of the Valley had more horizontal association with the close cities and towns on the east-west mountain hills axis than the north-south vertical association within the Valley, which defines its development map, today. The northern JV connected *'Ajloun* and Irbid in the east with *Bisan* in the west, central JV linked *As-Salt* in the east with *Nablus* in the west, and southern JV linked Hebron and Jerusalem with Amman. The discontinuity along the valley is mainly reflected in the differential influence of historical changes along the valley and the different forms of tribal presence and relations within its region. Those two facets of the Jordanian history and institutions are significant to the characteristics of the Northern Jordan Valley (NJV) today and the dynamics of socio-environmental conflict over irrigation water resources.

IV.2 The Ottoman rule and its influence on the Jordan Valley – *From 1516 to the birth of the Emirate*

In 1516, the Ottomans defeated the Mamluks and took over *Transjordan*. They divided the empire into *Wilayat* – provinces. Each province was sub-divided into *Liwas* – Sub-province, which was divided into *Nahyas* – districts. During the first century of their rule, almost all of *Transjordan* became part of *Liwa' 'Ajloun*, a sub-province of Damascus. *Liwa' 'Ajloun* consisted of seven *Nahiyas*: one of which was *Ghawr* (Map IV.2, p.99), which the Jordan Valley was unified under during that period (Kareem, 2000). Agricultural land was designated as state land and was distributed to local chiefs to manage it and collect tithe from the peasants on the government's behalf. Not all *Nahiys* contributed to the empire's treasury to the same extent. This did not necessarily reflect that the areas were not productive. The tax collection was more efficient towards the centres of administration and some areas were not even known to the governor of province (Rogan, 2000). Nonetheless, peasants did not get away without paying a share of their product. The payment was given to Bedouins who controlled those areas and enforced *Khawa* on the cultivators of the area or it could have been paid to the local chiefs who offered the cultivators protection from the Bedouin raids.

Map IV.2: The administrative division of Liwa' 'Ajloun during the 16th Century



Source: Bakhit and Hamoud (1991)

Some historians argue that *Transjordan* was not considered an important region to the Ottoman state in comparison to regions around Aleppo and Damascus, with the government's only priority in the region ensuring 'the safe passage of the annual pilgrimage caravan from Damascus to the holy cities of Mecca and Madina, which crossed the length of *Transjordan*' (Rogan, 2000, p.21). Powerful tribes along the *Haj* route were paid by the governor of Damascus to provide protection to the caravan as it passed through their territories. This left the different *Nawahis* of *Transjordan* to the mercy of their

local rulers or dominating Bedouin tribes for more than two centuries. The Ottoman records of the first half of the 16th century shows a growth in the Ottoman population followed by a decline from the second half of the 16th century to the 18th. Most of the villages on the eastern side of the Jordan Valley located between the *Yarmouk* River and the Dead Sea were recorded empty in the Ottoman tax records of the 16th century, despite the records showing that those villages did pay taxes on their crops (Kareem, 2000). This indicates that the inhabitants suffered the raids of Bedouin tribes, which forced them to temporarily migrate from the region, or to change their subsistence practices from farming to herding.

In the mid 19th century *Transjordan* regained its significance to the Ottoman Empire, during the reform era, called *Tanzimat*. The state was facing the dwindling revenue from its districts, which was the main source of finance to its army. 'The land regime had given way to a life-tenure tax farms [...] in which tax farmers were more concerned to preserve their profits than to remit regular taxes to the central treasury' (Rogan, 2000, p.3). Local leaders had their own militias, which undermined the central government's claim to its control over its region. This reform process aimed at increasing the state's revenue from cultivated land through the establishment of 'a direct fiscal relationship between landholders and the state tax agents' (Rogan, 2000, p.4) whose income was independent of the tax they collected. The administrative transformation anticipated by the reform was easily achieved in the urban centres, which had extensive experience in the Ottoman administration system. It was more challenging to achieve such transformations in remote rural areas, described as *frontiers* by Rogan (2000), as they 'represented socio-political orders apart from the institutions of the Empire at large' (p.6): the tribal society in the case of *Transjordan*. Tribal society is defined by both genealogical and territorial terms. Their association to specific territories at specific times is a significant definitive characteristic. Other tribes negotiate access to those territories and unauthorised entry would be perceived as an aggression. Peasants and towns people resided in towns and agricultural villages within the region, but were 'bound to the region's tribes in a common socio-political unit known as *chiefdom*' (Ibid, p.8).

The relation of peasants with prevailing powerful tribes within their regions took the shape of one of the following: The tribe of the district would protect the cultivators, their fields and their property from raids by other tribes in exchange for a share of their harvest and access to their market. The role of the *chiefdom* extended to include offering a system of justice and conflict resolution based on the Bedouin laws. The other similar form of relation was a more enforced form of contract in which the cultivators paid *Khawa* – enforced payment – to the powerful tribes that dominated the area in order to avoid its aggression. In the first case, the form of power exercised by the tribe – *chiefdom* - is a form of an accepted *authority* as opposed to the second case in which compliance was assured by *coercion* or *force*. The tribes in those frontiers performed all the function which the Ottoman state was

supposed to do. This 'arrangement' – whether enforced or contractual – was institutionalised through the social and power relations prevailing at the time.

The Ottoman state aim was to transform the individuals in the remote communities into Ottoman subjects. The Ottoman state needed to develop a form of 'trust' and 'loyalty' from its 'subjects' in order to encourage them to participate in the census and to register their land holdings. The government appealed to the values and beliefs of their subjects and offered them the security, which the *chiefdoms* used to provide them, in order to achieve that. Schools and mosques were built around the region to disseminate the religious discourse and to 'mobilise the Ottoman public behind their Caliph' (Rogan, 2000, p.14) in order to promote the loyalty to the Sultan as a legitimate ruler and a religious leader. Until then, although religion was a defining pole of identity, there were few institutions reinforcing religious practice around the frontiers. The government started building schools and mosques to be the institutions through which religion was fostered and to encourage the embracing of the values of the state by distant communities. The military was another institution through which the government aimed to mobilise in order to demonstrate the empire's power and ability to provide the security, hitherto lacking in the frontiers. The Ottomans fostered the creation of armed forces, mainly consisting of Circassian refugees who fled the Russian aggression in the late 19th century, many of whom had formal military training. The force mediated between tribes, new settlers and local villagers. It also protected cultivators and villagers from Bedouin aggressions and ensured abidance to law by all. They also accompanied tax collectors to collection missions from Bedouins and remote communities.

By improving the security for the remote communities and the prospect removal of *Za'amat* –local chiefs- as mediators between the state and the cultivators, the state succeeded in increasing the area of cultivated land and consequently tax collection from *Transjordan.* The security and the booming agricultural production encouraged merchants from Syria and Palestine to expand their operations in *Transjordan.* The economic activity of those merchants and the demand of the Ottoman government that taxes should be paid in coins led to the monetarisation of economic exchange, which hitherto was based on barter in kind. This process fostered the power of the merchants in the region as they diversified their economic activities to include money-lending. Most of the borrowers were cultivators and used to pay their annual debt interest in kind, which provided the merchants with 'a network of suppliers of agricultural produce and [allowed them] to negotiate prices well below the market rate' (Rogan, 2000, p.108). Land was mortgaged as collateral against debt, and some money-lenders used that process as a way of acquiring land (Abujaber, 1989). Whether by default or by design, money-lending led to the accumulation of land as a result of foreclosure on bad loans (Rogan, 2000, p.109).

The process eventually resulted with the urban élite emerging as large landholders in the region. Those transformations mainly took place in the town of *As-Salt*: an urban centre to the south of Irbid. The extension of *As-Salt* mountains towards the Jordan Valley were more towards it centre. As for Irbid and *'Ajloun*, the mountain towns to the east of the Northern part of the Jordan Valley, the new emerging élite was more local to the region. As the power of local chiefs was reducing by the direct rule, they were being transformed from chiefs to government officials, which emerged as the new élite in the region. The emergence of merchants as large landholders led to the expansion of wage labour. Absentee merchant landlords reverted to different forms of arrangements with landless peasants through which they worked in the agricultural land in either daily or seasonal contracts or as *murabe'* - an arrangement in which workers were given room, board and one quarter of the harvest from their teams' field. Consequently, the economic changes resulting from the reform process, managed to exacerbate the social stratification as new extremes of wealth and poverty emerged. This led to the creation of a 'real divide [...] developed between a small group of very wealthy, very powerful men, a middle level households still able to live off their own means, though with variable degree of debt, and a growing underclass of wage labourers' (Rogan, 2000, p.170).

As the reform process transformations varied in their impact on different town centres along the Eastern Heights, their influence varied accordingly on their adjacent agricultural lands and villages along the length of the Jordan Valley. A few assumptions can be made on the impact of those changes on the JV based on the information offered by Rogan (2000) and other historical studies. Before the reforms, the central and southern parts of the Valley were under the mercy of the Bedouin tribes, resulting with the desertion of those villages by their inhabitants. The proximity of the central part of the Valley to the town of *As-Salt* suggests that it benefited from the stability offered by the reforms. It also enjoyed irrigation rights from the *Zarka* River, which spurred the interest of the élite merchants in *As-Salt* who must have subjected it to land acquisition process. Rogan (2000) confirms that merchants were more deliberate in their land acquisition focusing on the frontier of settlement towards the desert and the Jordan Valley. The northern part of the Valley was not in the dire need for protection prior to the Ottoman reform, because it already enjoyed its own administrative system under the rule of the powerful local chiefs (Kareem, 2000). Interviews with elders of the area suggest that the *Ghzawi* family which moved to the Northern Jordan Valley (NJV) from *'Ajloun* at the end of the 16th century, played that role forming a *chiefdom* within a substantial part of NJV. The position and relation of the *Ghzawi* tribe with the peasants in NJV are fully discussed in chapter five.

IV.3 Tribal history and population influxes into the Jordan Valley – *The Ottoman reform and beyond*

The Jordan Valley is one of the hardest regions in Jordan and Palestine to research its population movements and tribal history before the 1900s, due to the absence of sufficient documentation about

the region's inhabitants prior to the 20th century. Western explorers considered the banks of Jordan River dangerous territories: the heat and wilderness were a source of discomfort and the perception that those travellers and the region's rulers held of its inhabitants as plunderers and killers were the main reason behind their aversion towards spending periods of time long enough to understand them. The Ottomans' interest in *Transjordan* rarely extended beyond the mountain towns and the pilgrimage route. As the inhabitants of the Jordan Valley were left to their own means, documentation of their presence was not pursued. Furthermore, despite the successful process of land registration in some parts of *Transjordan* during the Ottoman reform, many areas still refused to do so in fear of double taxation and military conscription. Another reason for the lack of specific documentation of the Jordan Valley during the 18th and 19th centuries is the fact that the unified administration of the JV in the 16th – 17th centuries was broken up in the 18th century into three small regions (Map IV.3a, p.104) and associated with three different sub-provinces - *Sanjaq* (Kareem, 2000). The Northern part of the Jordan Valley formed part of a newly formed area called *A'mal Baisan* – city on the western side of the River. The central part of the Valley formed part of *A'mal 'Ajloun* and the southern part down to the Dead Sea became part of *A'mal Al-Balka* and *Nablus* (ibid).

Travellers in the 18th and 19th centuries were mainly interested in exploring what is considered by Christians as the Holy Land (e.g. Robinson, 1860). Apart from the Dead Sea and Pella on the mountain plain east to the River, the Jordan Valley seemed to be a necessary evil in order to reach their travels' destinations. The understanding of the region's inhabitants was of no interest to them. As a matter of fact, the language used by most travellers[1] to briefly describe the inhabitants of the area was quite condescending and lacked respect. Travellers needed to take permission from the Ottoman ruler of the region to be able to move freely. If he approved their route, they would get an appropriate guide whom, in return for an agreed pay and food, would accompany them with a number of guards throughout their expedition. Guides were usually respected leaders of tribes known for their good relation with other tribes within the territory. The guides would, thus, protect the travellers from robbery and attack by those tribes.

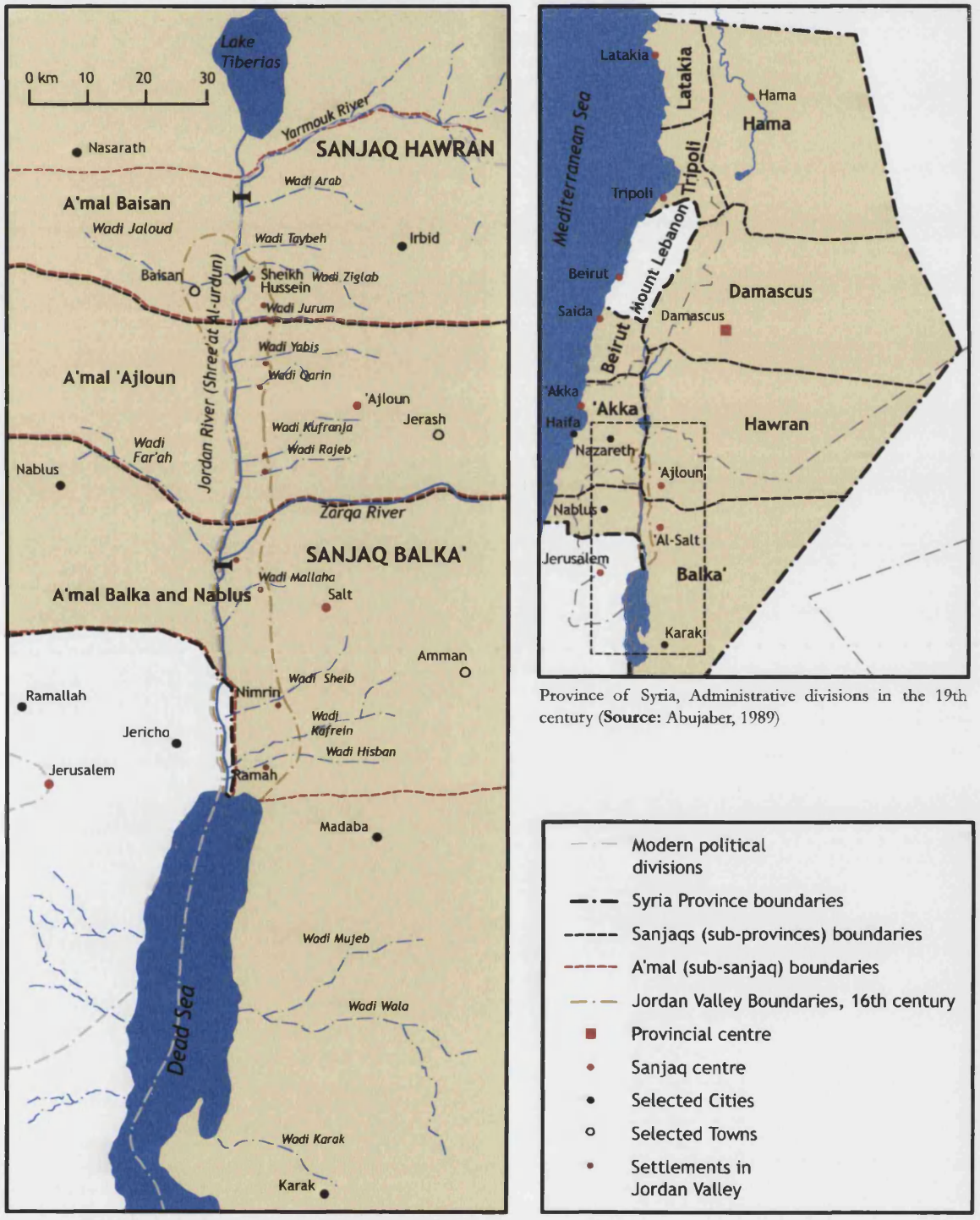
It is true that some Bedouin tribes in the region where known to depend on robbery and plundering of other tribes' cattle[2]. Some of the Bedouin tribes known for that type of life in the 19th century were *As-Saqer* in the Northern part of Palestine west of the Jordan River, *Sukhur Al-Ghor* on the Northern part east of the river and *Al-Idwan* of *Bani Sakher* in the Southern part east of the River (Tristram, 1866). Other tribes are also mentioned to have presence in the Valley, such as *Sardya - Shraydeh* – and probably claim over land within the area, but those tribes resided in the foothills- *Shafa* in Arabic- of the Valley and had more contact with the mountain areas (map IV.3.b, p.106). Libbey

[1] e.g. Robinson, 1860; Revell Co., 1900; and Libbey and Hoskins, 1905

[2] Contrary to prevailing perceptions, many of the travellers were pleasantly surprised by the good treatment and hospitality of the Bedouins they came across in the Valley.

and Hoskins (1905) described the inhabitants of the Jordan Valley as a mixture of Bedouins who led a pastoralist way of life, who 'winter[ed] in the Jordan Valley and summer[ed] in the highlands' and peasants who were 'too poor to own a second camping-ground, and dwell[ed] forever in the hot Valley' (p.280). Hourani (1991), argues that the 'mobility and hardiness of the nomadic pastoralists tended to give them a dominant position' (p.101). This trait would also explain the plundering they practiced to expand their dominance and power in the regions, which they moved within.

Map IV.3.a: Administrative divisions in the Jordan Valley during the 18th century



Province of Syria, Administrative divisions in the 19th century (**Source:** Abujaber, 1989)

Source: Approximate reconstruction based on the description of Kareem (2000)

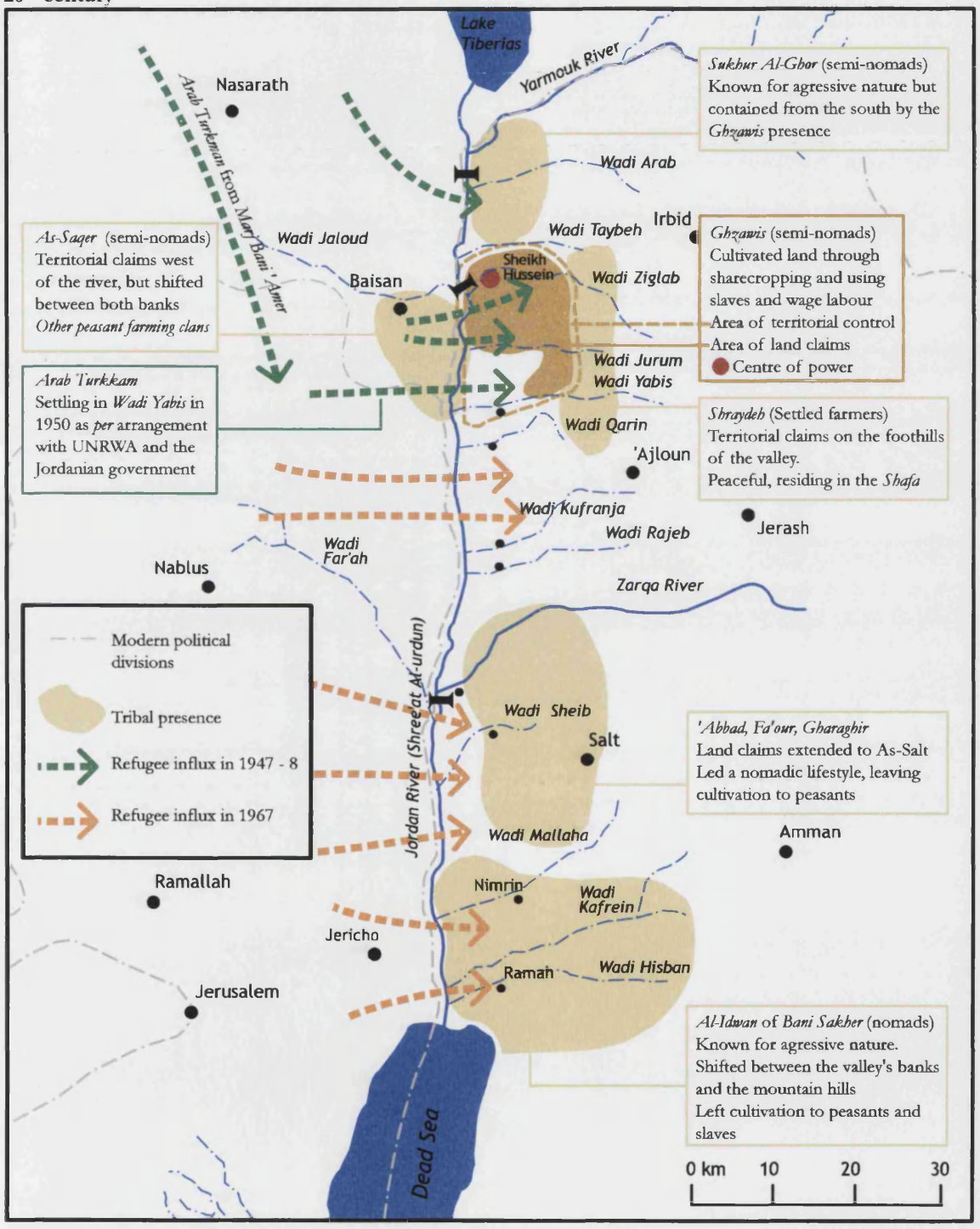
Almost all the village community and peasants who used to reside in the area south to the *Zarka* River abandoned the region, to the control of the aggressive *Sakher* and *Abbad* Bedouin tribes. The Northern part of the Valley was an exception, as it enjoyed a level of stability and agricultural activity sustained by the protection offered by powerful local chiefs (Kareem, 2000), who according to sources on the tribes encamping both sides of the NJV were either the *Ghzawi* or *As-Saqer* tribe (Rustum, 1966). Considering the more *nomadic* lifestyle sustained by *As-Saqer* till our present day, it can be safely argued the *Ghzawi* chiefs were the predominant local *chiefdom* in the area. This assumption is confirmed by the account of Buckingham (1828, cited in Kareem, 2000) of the presence of the tribe of the *Ameer El-Ghazowee* –The prince of *Ghzawi* – in *Tell el-Arba'in*, now part of *Sheikh Hussein*. While the CJV came under the Ottoman control in 1868 and the southern part was defeated in 1893, the *Ghzawi* and *As-Saqer*, revolted against the attempts of Ottoman control over the region and succeeded to remain independent and paid no taxes to the Ottoman Empire well into the 1890s (Kareem, 2000).

The valley offered good pasture to Bedouin tribes who resided in the area during the 19th century (Kareem, 2000). In the 1830s, peasants from towns on hillsides of the Valley planted wheat and corn in *Wadi Al-Yabis* (Robinson, 1860). Even in the Southern Jordan Valley (SJV) 'black Bedouins', known of their aggressive nature, cultivated the area with wheat in 1891 (Kareem. 2000). Historians argue that the period between the ends of the 16th century and the 19th century suffered a sharp decrease in the settlements in the Valley due to high taxation and the fragmentation of authority. The NJV remained an exception, as it enjoyed a higher level of settlement and production (Kareem, 2000). Although CJV attracted cultivation due to the abundance of water from *Wadi Zarka*, settlement tended to be closer to the foothills towards the mountain where the river met the valley. The Bedouin tribes who had claims over the area, *'Abbad*, *Fa'our*, *Gharaghir* led a nomadic lifestyle, leaving its cultivation to the peasants who lived in the Valley all year round.

The settlement pattern along the Valley remained almost unchanged as the Ottoman Empire collapsed and the British took over the mandate over *Transjordan*. With some variation, the valley residents comprised of nomadic and semi-nomadic tribes with claims over land within the valley: *'Idwan* in the south, *'Abbad* in the centre, *Ghzawi* to the north and *Skhour Al-Ghor* further north, and settled peasants who cultivated on small plots for subsistence or worked in the larger plots for the advantage of the *chiefdoms* or the emerging urban élite. The peasant community, which resided in the valley since the 18th century, was not homogenous. It consisted of a mix of those who were considered the original residents of the area, those who migrated from Egypt encouraged by the Ottoman reforms or slaves brought form Africa to the area during the reforms (Karmon, 1953, cited in Kareem, 2000). Sources varied in its definition of the word *Ghawarneh* – singular *Ghorani*, meaning from *Ghor*. Some use it to refer to all the peasants in the area (e.g. Merrill, 1881), others argue that the term only refers to those from Egyptian origins, known with their darker skin and some particularly

refer to those of slave origin (Lavergne, 1998, cited in Van Aken, forthcoming). The difficulty in discerning the difference lies in the difficulty to genealogically study this construct, as peasant clans within the valley would rather dissociate themselves from 'slave' connotations.

Map IV.3.b: Tribal distribution in the Jordan Valley in the 19th century and population influxes of the 20th century



The establishment of Israel in 1947 and the displacement of over one million Palestinian refugees led to the disruption of this low-density settlement pattern. Jordan received 487,000 of the Palestinian refugees (UNRWA, 1954) who fled to neighbouring Arab countries. The central and southern parts of the Jordan Valley did not undergo the population influx that the NJV went through. This was because the CJV and SJV were not adjacent to the parts of Palestine that were taken over by Israel (See map IV.3.b, p.106). The Palestinian side of NJV suffered the Israeli aggression, which led to its division into two political entities. Until this division, many of the tribes residing in the Valley used to impartially cross back and forth between the west and east sides of the river. Thus, many Palestinians who lived in *Baisan* or the regions around it crossed the river, temporarily, towards the east of the valley, in order to flee the aggression of the Jewish groups, which used to attack Arab villages. Many of the refugees who were landholders in Palestine opted to stay on the east side of the valley close to their land planning to return immediately once peace was restored in the region[3]. *As-Saqer* tribe was one of the largest tribes who crossed the river to the east bank. Another tribe which crossed to the east bank of the northern JV is the *Turkman*, who originated from the port city of *Haifa* and were landholders in the fertile plain of *Marj Bani 'Amer* in northern Palestine.

As a result of the Palestinian plight, the United Nations Relief and Works Agency for Palestinian Refugees in the Near East (UNRWA) was established in 1949[4] with the purpose of offering temporary support to the refugees in the various host countries. By 1952, and due to the realisation that the resolution of the Palestinian refugees issue was not in sight, the UNRWA shifted its emphasis to activities 'leading to the rehabilitation rather than the provision of temporary employment' in order to remove refugees from dependence on relief (UNRWA, 1954, p.1) through the integration of the refugees in the economic and social life of the Near East. This was to be achieved mainly through large development projects to provide living for the refugees. One of the main projects that were part of this scheme is the development of irrigation system in the *Yarmouk*-Jordan Valley to settle thousands of families and make them self-supporting by agriculture (UNRWA, 1954). This was an earlier scheme of the East *Ghor* Canal Project (EGC) and the UNRWA was a major actor in the envisioning it in the early 1950s. The 'rehabilitation' effort commenced by various attempts to settle Palestinian refugee families in the Valley, offering them land tenure and irrigation systems, equipment, and logistic support in return for their rations card (UNRWA, 1956).

By 1958 the UNRWA abandoned the scheme and turned its focus to welfare issues, such as education, health and vocational training. This was because the majority of Palestinian refugees linked the process of rehabilitation and reintegration with permanent resettlement and the

[3] Not all refugees opted to live in refugee centres set up by UNRWA. Those who could afford it, shunned from living in the camps, but others preferred to be closer to their original hometowns.

[4] General Assembly of the United Nations, 1949, Resolution 302 (IV).

abandonment of hopes for repatriation (UNRWA, 1954). Nonetheless, some families opted for 'rehabilitation' maintaining that the process was not going to prejudice their right for repatriation according to the provision 11 of resolution 194 of 1948. The *Turkmen* tribe was one of those who opted to receive land and settle in the Jordan Valley. In return for their rations card, they were awarded a collective right over a plot of land, which was previously owned by the *Zainati* tribe. The *Zainati* tribe is itself a Palestinian tribe associated with the *Ghzawi* tribe due to their interaction and exchange on both sides of the river. However, in 1946, one of the tribe's chiefs was assassinated for suspicion of selling Palestinian land to the Jewish Agency during the peak of the conflict. It is said that the large plots of land in the eastern side of the NJV, which the *Zainati* tribe owned and sold part of to the UNRWA, was granted to them by the British government in return for the sale of their plots in Palestine to the Jewish Agency.

The occupation of the West Bank and Gaza strip, in 1967, resulted with another 375,000 Palestinians (World Bank, 1997) crossing the river to the East Bank. Those included 1948 refugees who were in refugee camps in the West Bank as well as the Palestinians of the West Bank themselves, who became referred to as *displaced*. The 'displaced' of the 1967 conflict dispersed to several urban centres in Jordan, while some opted to cross the river to the other side of the Valley, with some of them staying in *Wadi Arrayyan*, the only part of the research area across the river from the West Bank. The area was more socially attractive to the *displaced* Palestinians as it was widely populated by Palestinian refugees. However, as the JV became a battlefield between the Palestinian *fida'yyein* and the Israeli army, the residents of the valley abandoned it in 1968 to cities and camps uphill, until 1971 when quiet was restored again in the Valley.

IV.4 Access to and control of water resources prior to the nation-state – *Islam, the Ottoman code and customary practices*

The above discussion demonstrates the diversity, which characterised the people of Jordan and their way of life. Rogan (2000) described the Jordanian society of the 18th and 19th centuries as a wide spectrum where '[a]t one end [...] were village-dwelling farmers who practised intensive agriculture in hillside terraced plots and extensive grain cultivation in the surrounding plains. At the other end of the spectrum were camel-herding pastoral nomads who travelled great distances between summer and winter pastures. Between these two groups were farmers who kept small herds, semi-sedentary pastoralists, and villagers who encamped in distant fields during the cultivation season' (p.8). Nonetheless, the lives of those groups who led diverse lifestyles intersected and were interdependent. In addition to their need to exchange each others products, both pastoralists and cultivators needed the same water and land in order to survive.

In 1858, the Ottoman Land Code was introduced as part of the reform process. This was the main legal institution, which prevailed for access to and management of land. On the other hand, the local

customs, 'a system of rules and habits generally accepted as valid and obeyed more often than not' (Hourani, 1991, p.113), which were mainly based on Bedouin practices and maintained by respected elders and tribal chiefs, dictated many aspects of access to land and water. The Islamic Law was not formally institutionalised as the Ottoman Code was through state enforcement or the local customs through long practice and maintained by the prevailing social and power relations. Yet, as a 'defining pole of identity' (Rogan, 2000, p.36) Islamic teachings prevailed through the values and beliefs of the dominantly Muslim society and infiltrated both the Ottoman laws and local customary practices. It is important to maintain a distinguishing approach when exploring those three underlying premises, because the impact of one in comparison to the others varies from one area to another. This variation depends on the make up of the population in a particular area and its relation with the different socio-political systems prevailing at the local and regional level.

Islam as 'A pole of identity'

Jordan is predominantly Moslem, with Christians comprising only 8% of the population (CIA, 2001). Most of the Jordanian Christians originate from Iraq or the Arab Peninsula and they identify with Moslems in terms of the Arab origins and history they share. Christians share many of their social practices with the Moslems. Some of those practices originate from Islamic Law mixed with those of Bedouin origins. As Islam originated in the Arab Peninsula, it is only normal that the Bedouin and nomadic nature of Peninsula's population influenced some of its practice. The desert nature of the Peninsula must have also been the reason for the importance water is given in Islamic thought. Although Islam has deep philosophical grounds, it tends to set out the basis of everyday life practices, including that of water. Islam distinguishes the use of water in two senses: as a common good and as a private good. The saying of Prophet Mohammad, 'All community are equal partners in three things: water, fire and pasture' (Cited in Dutton, 1992, p.57), is the basis for the use of water as a common good: meaning a *good for all.*

Water was considered a common good only in its 'God-sent' form, i.e. seas, lakes, rivers and springs in public domains. Considering that a substantial area of Jordan is desert, it was a common practice for nomadic tribes to dig wells and move to another area after utilising them. Those wells were considered a common good for whoever passes them, because they are abandoned and those who dug them are unknown to the passers by. Once water gushes within privately held land, it is considered the property of the landowner(s). Only in the case of thirst are private rights to water overridden. Anybody can access water, whether in public or private domain, to quench his or her thirst. According to Dutton (1992) there is a ladder of prioritisation for water use in Islamic societies, which put quenching thirst first, watering domestic animals and then cultivation. This hierarchy also reflects a prioritisation for the use of water for survival, of human beings then animals, followed by use of water for sustenance practices and lastly for surplus purposes. It is difficult to distinguish those practices from customary practices found in areas of scarce water resources like the desert.

Until the present day, most houses in rural areas and many in urban areas place a large jar of water outside their dwellings, to quench the thirst of the 'passing traveller'.

By connecting exclusivity of access to water to access to privately held land, Islam set an important principle that influenced the understanding of rights to water for centuries to come, including the customary practices and Ottoman laws. Although Prophet Mohammad set the principle that all community shared pasture, Islam set the principles for private rights to land. A person who clears a piece of land and develops it through cultivation gains the private right to that plot – *mulk* (Lancaster and Lancaster, 1999). *Mulk* rights are the only aspect that is significant to the discussion of the influence of Islam on land rights in the JV, because Islamic *Shari'a* was not prevailing in the region as a legal and religious institution. However, many of its aspects will be revealed, later in the discussion of the Ottoman Land Code of 1858.

Exclusive rights to water are also gained through development of water sources (Lancaster and Lancaster, 1999). This intersects with Locke's thought on the right to appropriation of the product of one's own labour (Bromley, 1991). In Islam, water becomes the property of those who bear the labour of digging wells or building channels to contain and divert that water. Although the need for water was recognised and fulfilled through making it a common good in its 'God-sent' form, it was also defined as a private good, which once contained could be sold as a commodity. The pricing of water as a commodity should only reflect the value of the effort given in the process of extraction, containment, storage and transport (Lancaster and Lancaster, 1999). Thus, it would be more accurate to argue that rather than commodifying water, which is a 'God-sent' gift, it was the labour that was commodified.

Even with the attempts to legitimise the Ottoman rule through religious institutions, Islam was not legally institutionalised in the JV during the 18th and 19th century. Islam was prevailing through its embeddedness within the local culture and daily-life practices. Adherence to Islamic principles was a reflection of the extent to which it inspired the prevailing values and beliefs of the Valley's people. Conformity with this all-encompassing value system reinforced the social relations within and between different tribes. As a shared value system, Islam was the equalising element within a setting of multiple forms of unequal power relations defined by various aspects such as life style –nomadic vs. pastoralist-, origin, type of labour and power structures, which were institutionalised through the Ottoman taxation system.

Customary practices

Customary practices were held and maintained by the Bedouin tribes residing in the region. Thus, it is important to understand the tribal society as a social construct, in order to understand the influence of such notion on the adherence to customary practices and how sustaining those practices reinforced the various aspects of the meaning of tribal society. The tribes which the Ottomans

confronted in their administrative expansion to the frontiers varied in size and ways of life: settled cultivators, nomads and semi-nomads. Rogan defines the tribe as 'a social group defined by genealogical and territorial terms' (Rogan, 2000, p.7). She emphasises using the term genealogy in its wider political meaning rather than its biological meaning, as 'fellow tribesmen acknowledge a common ancestor as part of a shared foundation myth and history'. However, Eickelman (1989) untangles this definition into four principles by which Middle Eastern tribal identity can be understood. Those are: first, the elaborate understanding of the local people of themselves as a tribe; second, the manner by which state authorities perceive and deal with tribes; third, the practical notions held by people in a non-ideological understanding of the tribe and finally the anthropological concepts of the tribe. The fourth notion is of no relevance to this discussion as it focuses on the different ways the anthropologist traditionally defined the tribe such as, native, primitive and indigenous.

Locally held definitions of tribal identity are 'generally based upon a concept of political identity formed through common patrilineal descent' (ibid, p.128). It is on the bases of this principle that notions of kinship and loyalty are built, and through which social relations are mainly mediated. However, tribal trees are permeable and in many instants smaller tribes tend to add themselves to the collective genealogy of another tribe (Rogan, 2000). This is done to ensure protection either from the stronger tribe to which they attach themselves or from other stronger rivalry tribes. Such alliances do not necessarily elevate the status of the smaller tribe, but rather create stratification within the larger tribe to which they attached themselves. Thus, the extent of tribal identity varies depending on the social position of the people and their original tribe (Eickelman, 1989). This conduct was encountered during the fieldwork, in individual and collective manners. Those from lower status or smaller tribes sought to reinforce their alliance with higher status tribes through conforming to prevailing practices, assimilating their values and subordinating themselves to their existing power structures. Those from higher status or stronger tribes reinforced their power and position through their demonstration of loyalty: a central value to tribal identity.

States tend to perceive tribes through their territorial boundaries and political standing. Leaders of powerful tribes who have dominance over important territories gain state privileges and authority in exchange for their support to those states (Eickelman, 1989). This highlights the importance of territorial claims to the reinforcement of tribal power. Territorial claims are also survival issue as both cultivators and pastoralists need land for their sustenance. Cultivators need land for planting crops like wheat and corn and pastoralists need pasture for their animals. The importance of territory as a survival issue brings in the third principle of tribal identity defined by the practical notions. Those are notions 'held by tribesmen as a guide to everyday conduct in their relations between larger social groups' (Eickelman, 1989, p.129). Thus, tribal identity emerges through social action rather than abstract reflections on the definition of the tribal identity. Customary practices are found within the

practical notion of tribal identity, although strongly influenced by the previous two. The practical notions 'govern crucial areas of activity, including factional alignments over land rights, pastures and other political claims, marriage strategies (themselves a form of political activity) and many aspects of patronage' (ibid, p.129).

The notions of tribal identity highlight the political and survival importance of land rights to Bedouin tribes. Customary practices influence the determination of those rights and reinforce tribal identity. Herding tribes held customary rights to land they used in certain seasons, where they dug wells and provided security to the residing peasants. The customary right to land was considered as tribal ownership and was referred to as *dira* –homeland. The term denotes 'customary use for the provision of livelihood and the necessary management of social relations' (Lancaster and Lancaster, 1999, p.69). The territorial claim of powerful tribes spread over sections of the valley, the foothills, and the plateau, spending summer in the cooler mountains and winters in the valley. Smaller tribes of settled peasants cultivated the land in return for the protection of those tribes. Settled cultivators and nomadic pastoralists depended on each other for exchange of each other's products (Hourani, 1991). Nonetheless, pastoralists 'by a certain hierarchical conception of the rural world; [...] regarded themselves as having freedom, nobility and honour, which were lacking to peasants (ibid, p.102). The extent of their territory was important to the degree of their freedom, their power and their ability to sustain a lucrative livelihood from their products and the *khawa* collected from settled peasants.

Sometimes this form of 'ownership' came under a communal form called *musha'*, which existed in many areas in Jordan, including the JV. *Musha'* land is described by Lancaster and Lancaster (1999, p. 304) as 'land communally owned by peasant villagers, practising arable cultivation and herding, and periodically redistributed among members'. *Musha'* land was also tribally held in some regions in Jordan, and each group divided the land among their families in terms of shares out of fixed total (ibid). The distribution of land was based on either the size of each population or the size of labour available in that population which is able to plough the land. *Musha'* system was developed to avoid taxes as well as a means to minimise risk in agricultural practice by distribution and rotation of land (Lancaster and Lancaster, 1999). The ownership of land for some tribes goes back as far as the Islamic rule when some rulers granted state-controlled undeveloped land to members of their families, their associates, and military leaders, through *Iqta'*. When passing to the descendants of that person, the land holding would turn into a *musha'* situation. In other times, the land could have stayed in the hands of a small number of tribe members, establishing them as local rulers of the area. Powerful élite, whose land was bestowed upon them by the rulers, did not have to pay tax on their land, while peasant renters had to pay rent to landholders as well as tax to the Ottoman state (Johansen, 1988).

The overlapping of customary practices and Islamic laws implied that one would overcome the other in some cases depending on the objectives of the members of a family or a tribe. In Islam land rights are passed to children by inheritance. However, female daughters are entitled to inherit half a share of that of a male from their deceased fathers' property. In order to maintain the same level of power, tribes needed to make sure that their claim to their own territory would not be decreased by the transformation of land to the hands of other tribes. This is one of the reasons why it was a common practice that a woman should marry her paternal cousin. In many cases, fathers would grant their sons the inheritance or part of it during their lifetime in order to ensure that the land would not be inherited by their daughters. This practice illustrates a case when customary traditions overcome Islamic laws, in order to maintain territorial rule. The notion of 'owning' land or right to land was linked to 'ruling' by particular tribes (Lancaster and Lancaster, 1999). Usually the chief of the tribe with largest territory in the region would be considered the ruler of that region. The power of the tribe bestowed upon its leader a respected aura by which he would manage the distribution of land, head 'negotiations' over the distribution of irrigation water resources, and arbitrate conflict resolution. The influential role of the tribe's chief extended beyond distribution of water resources within land under his tribe's control. It also included distribution of the main water source between his tribe's land and their other neighbouring and less powerful tribes whose territorial rights were significantly inferior to that of the larger tribe.

Access to water was guided by the underlying Islamic principles on rights to water coupled with an understanding of the nature of water through observation and practice (Lancaster and Lancaster, 1999). Landholders, who had springs bursting in their land, enjoyed exclusive rights to water gushing through it. Only at the landholders' own discretion would he let that water gush through his neighbours' land, after he finished irrigating his own crops. The establishment of rights to land and water through productive development of the land was quite influential on the customary practices of access to and control of resources that prevailed in the JV well into the 20th century. Side valleys water –*wadis*- gushed through the valley from the hills down to its lowest part. Most *wadis* water gushed through lands held by different owners and ended in a public domain, the river, rendering them public domains. This called for an arrangement to utilise the valleys' water to irrigate the lands on the sides, which was common in areas irrigated by rainwater trickling down the highlands towards the valley, as well as rivers and stream waters in the NJV and CJV. Agriculture in the highlands did not call for arrangements for the distribution of water because they were rainfed. As for the drier areas, such as the SJV and the Eastern Desert, cultivation and agriculture depended on underground water. Wells were dug within private land, rendering it private property. There was no limitation on water extracted from those wells. Conflict over rights to water, there, were overshadowed by claims over land, especially that tribes of the SJV led a nomadic life.

Customary water use was confirmed by Islamic law, which set the principles governing priorities of rights to irrigation water. Under those principles, upstream has priority over downstream; riverine lands have priority to distant land; and previously cultivated land has priority over land about to be developed (Lancaster and Lancaster, 1999). However, interviews with elders revealed that in the Jordan Valley, land rights formed the basis for the distribution of water rights among the landholders or cultivators. This does not necessarily contradict with Lancaster and Lancaster's findings, because variations occur in water management arrangements in different regions in Jordan. In the Jordan Valley, groups of cultivators built canals –*qanat*-, which channelled floodwater to the different plots designated for the use of different individuals or families. In most cases canals were built by peasants and/or slaves working for large landholders. Water shares –*'husas*- where divided following land shares, which were converted into hours and summed up to determine how many days, hours or fractions of the hours each land would receive. The schedule was not written but each person or family knew when their turn was because it followed the flow of water from one land to the next. Some landholders would have water turns up to a week or more due to the size of their land.

Water rights were passed on from one generation to another and the local chief was responsible for dealing with disputes over those rights. Apart from the shares schedule, there was no specific system for monitoring the distribution of water or penalising non-compliance. Each cultivator, whether in his land or working for someone else, would watch as water reached the neighbouring land, know when his turn is and make sure s/he would receive his share at the appointed time, by closing the flood water to the neighbouring land and opening their own. If someone kept the water opened beyond their allowed share, the neighbour would immediately realise that. Cultivators who had long turns would keep the canal open unattended, which could subject the water to stealing as a neighbouring cultivator could block the water flow and divert it to his land. In many cases, these issues were dealt with on the spot; in some case, especially when there was a group of cultivators working for a large landholder the situation could turn into a violent conflict. Unresolved conflicts were always taken to the local chief, who would arbitrate the issue in the presence of the two parties and any other villager attending his *madafa*[5] –guest house. The local chief plays the role of the judge and decides who was at fault. It was quite rare that anyone would defy the local chief's decision. This was not only an expression of the chief's power or respectable status. It was also an act of belonging to the community, because defiance implied alienation from the social network to which cultivators belonged and on which their survival depended. However, resolution of the conflict sometimes only meant making peace between the two parties without making up for the loss of water share. This is because in order to make up for the lost time they had to wait a full cycle until they received their turn again.

[5] Hospitality in the Bedouin tradition is an expression of their generosity, honor and power. The chief would receive villagers in his *madafa* to discuss issues of relevance to the village. Outsiders were received in the *madafa*, where they were offered food and shelter for three days (Rogan, 2000).

Customary practices in dealing with water resources were not culturally derived only. It was a more complex and dynamic construct, which is still constantly mediated through practical knowledge of the ecological importance and limits of water in a scarce environment and their need to survive, biologically and culturally. Cultivators used to cultivate only as much land as the quantity of water allowed them to irrigate, depending on the rain season. Although their time share would not change, they were aware that they would not receive the same quantity of water (Interviews, 2001). Despite the fact that water scarcity was associated with the arid region, it was perceived through the 'episodic' dimension of drought, to which cultivators needed to adapt for a season or two. Their practices remained limited to temporary measures, even when such 'episodes' extended over longer periods. Religious myth, such as the Quranic –and biblical- story of Joseph in which his tribe stored wheat during seven years of abundance in preparation for the forthcoming years of drought, reinforced such practices.

Understanding of the value of water reinforced practices, which were not linked to tribal customs but more derived from local ecological knowledge of water. Those were ethical practice codes tied to the use of water as a common good. Knowing the importance of water to human survival, water users had to ensure that their use would not induce harm to the source. In the Jordan Valley this was a common practice, which persisted well into the 1970s when domestic water was piped to the Valley. Women and children (mostly girls) used to collect water from springs and water streams. More than one trip was needed to cover the daily domestic needs. Rules of conduct implied that water for domestic use would be collected from the upper parts of the streams, while herders watered their animals, from the lower parts to ensure keeping the water clean. Herders could water their animals from running water and from wells provided that they did not cause damage to the water sources (Interview, female housewife, *Sheikh Hussein*, 17 July, 2000).

The Ottoman Land Code of 1858

The Land Code of 1858 was introduced during the reform period in order to establish a direct relation between landholders and the state to increase the treasury revenues by direct taxation preformed by the government employees. The Code aimed at abolishing the system of *Za'amat* established by the Ottoman state itself and to encourage settlement and cultivation of customary held land by nomadic tribes. According to the Code land rights had to be registered with government land offices, be cultivated and pay taxes regularly. Without a title deed specifying the land category and the holder's right, tribes stood the risk of losing their lands. Since access to water was linked to land rights, the categorisation of land rights introduced by the code are imperative to this discussion. The implementation of land registration under the code did not commence in *Transjordan* until 1876 (Rogan, 2000) and only in districts close to the administrative centre in Damascus. It spread slowly to

the outskirts and was never fully concluded in the region. Nonetheless, the code was the only legal institution through which land rights were registered in Jordan till the early 1930s.

According to Konikoff (1943), the Ottoman Land Code of 1858 was still active at the time of writing his book. It was amended by subsequent legislation and frequently modified by local customs. It is argued that the code was not clear enough and the practice varied from one area to another depending on the distance from the central administration. The Ottoman Land Law distinguishes between five categories of land rights: *mulk*, *miri*, *Waqf* –*Mevqufe* in Turkish-, *metrouke*, and *mewat* – *Mevat* in Turkish (Tute, 1927). *Miri* land, *metrouke* land and *mewat* land are all a variety of land categories held under the State's supreme ownership. *Mulk*, which means owned and implies a private right, is the most complete form of ownership known to the Islamic Law. It only refers to residential property within village and town boundaries and is dealt with under the provisions of the Ottoman civil law –*the mejelle*. *Waqf* land was theoretically held in the ownership of the Deity. In practice it is a *miri* or *mulk* property that has been dedicated for religious or charitable object (Konikoff, 1943). The *Waqf* land originated from Islamic Law and continued to be governed by its provisions under the Ottoman rule. While *Waqf* that was dedicated of *mulk* property became ultimately under the control of the charitable party, *Waqf* that was dedicated of *miri* property remained under the state's disposition, despite the fact that it is benefiting a charity. *Waqf* land was rented to farmers benefiting the charities holding the title.

As the *Mulk* land was governed through the *mejelle* and *Waqf* land through the Islamic Law, the Land Code was introduced to govern the three forms of state controlled land: *Miri*, *mewat* and *metrouke*. State land, 'the legal ownership of which is vested in the treasury, comprises arable fields, meadows, summer and winter pasturing grounds, woodland and the like, the enjoyment of which is granted by the Government' (Tute, 1927, p.7). Until the introduction of the code, those lands were controlled by feudatories of *timars* and *Zamats* as lords of the soil, appointed by the government. *Metrouke* land is 'land left for the use of the public' either as a highway or as land 'assigned for the inhabitants generally of a village or town or of several villages or towns grouped together' (ibid, p.14) such as pastures. Although under the state's supreme control, the *metrouke* land can be considered commonly held property, because the state left it to the villagers themselves to manage it. *Mewat* land 'is the land occupied by no one, and has not been left for the use of the public, which could include pastures. Although 'unassigned', the village, within whose boundaries the pasture lied, enjoyed a free right to use them, while outsiders had to pay fees to the state in order to use those pastures (ibid). However, *mewat* land was not considered "commonly" held as the *metrouke* was.

Of the three state-controlled land categories, *miri* land is the most related to this research. All agricultural land was held by *miri* title. Unlike pastoralism, which was carried out on commonly held pastures, agricultural practice was only practiced on *miri* land through usufruct. The meaning of *miri*

is 'belonging to the *Emir* – prince', referring to its original status when it used to be held by feudatories, who used to grant usufruct rights to cultivators and collected tithe from them on behalf of the government. Many feudatories developed the land for their own benefit using slaves or wage labourers from the poor peasants of the area. The introduction of the code aimed at demolishing this system through registering the cultivators' rights to the land, in order for the government to ensure receiving the tithe. *Miri* land remained under state control, but access to it was opened to individual peasants for cultivation and was acquired through title deeds. In return for an advance registration payment, private persons became holders of *miri* land by usufruct rights (*tasarrof*): ownership (*raqaba*) remained in the hands of the state. This gave the state the right of eviction in case the land was left uncultivated for three years in a row or failed to pay tithe and taxes. Land could also be claimed for holding as *miri* land by evidence of continuous unchallenged squatter for 10 years. This provision influenced access to land in Jordan until recent years, called access to land through *wade' al-yad* –placement of hand. On the other hand, inspired by Islamic laws, if *mewat* land was developed by clearing, digging a well, making a water course or cultivation by a private person, its usufruct would be granted to that person as *miri* land (Tute, 1927).

Agricultural practice required substantial human labour, especially in cases of large land holdings. Those who possessed large plots of lands would either use slaves or hire man labour. This in some instances involved hiring Palestinian and Egyptian labourers (Lancaster and Lancaster, 1999). Those who were not willing or could not afford practising agriculture or hiring labour reverted to sharecropping to ensure maintaining their lands, which 'serve[d] as a legal basis for the productive use of lands' (Johansen, 1988, p.51). Through sharecropping, landowners could save their land from being reclaimed by the state, while small farmers could practice productive agriculture without bearing all its costs. Johansen (1988) refers to three forms of contractual relations in sharecropping, which were practiced during the Ottoman period. The first form is when partner A contributes land and seed and partner B contributes work and cattle. The second form is when partner A contributes only land, while B contributes seeds, work and cattle. Those two forms of sharecropping were called *muzara'a*, which was considered a type of partnership (Abujaber, 1989). The last form of sharecropping is when A contributes work while B contributes, land, seed and cattle. In this case, sharecropping is called *muraba'a*, where the partner who contributes the work received one quarter of the land product by the end of the season (ibid).

The usufruct right of *miri* land was inheritable, by which on the death of the possessor 'the land devolves in equal shares, gratuitously and without payment of any price, upon his children of both sexes' (Article 54 in Tute, 1927, p.56). Succession of *miri* land could not be altered by will, but the law allowed it to be given away as a gift or sold on a deathbed. This provision allowed holders the possibility to deny women their rights to their fathers' land or give their brothers a larger share in accordance with the Islamic Law. The rights of the inheritors in their fathers land was protected, under the 1858 code, from being seized by debtors in closure of the dept upon the death of their

father. However, in 1871, the law was modified in a way which 'made it possible for the creditor [...] to have the debtor's property sold in satisfaction [of the debt] with the exception of a house and land sufficient for the latter's maintenance' (Tute, 1927, p.108). This included *miri* property as well. The creditor also had the option of buying the land and giving the balance of his debt to the landholder or his inheritors. This provision played a major role in the process of transferring land from the hands of the small cultivators to moneylenders from within and outside the area.

The code allowed the possessor of *miri* land to only utilise its topsoil, i.e. cultivation, but that did not include the cultivation of trees or orchids. The state had the right to remove the planted trees or orchids within three years of their planting. Otherwise, they would become the ownership of the land possessor rather than the state, but had to pay tithe of their produce annually (Article 25 in Tute, 1927, p.33). This provision did not prevail beyond the Ottoman rule as the customary practice, which stated that 'the land and what is over it is the right of the landowner' became legalised through the Jordanian legal system. That is why until this present day those who cultivate others peoples land through sharecropping or by lease would not invest in digging wells or planting trees.

Only one article of the code referred to 'rights to watering' and was in an ambiguous manner. Article 124 (Ibid, p.117) states, 'In disputes as to rights of watering crops and animals of irrigation and over water channels only *ab antique* usage is taken into account', meaning that only ancient rights are referred to in cases of disputes over water for both irrigation and animal watering. The code avoided creating or asserting water rights, leaving the issue of water to prevailing customary practices and claims. The code legally de-linked water rights from land rights, which must have put the cultivators under the mercy of those who had traditional rights to the water sources. If anything, the conditions, which the Ottoman Land Code created, demanded the development of a self-managed community system by which water was accessed by cultivators. Such a system cannot be called a common property rights system: It is rather a system by which exclusive and publicly-accessed water was distributed between agricultural lands according to agreed upon - or even enforced- principles to be followed by the community members of cultivators and traditional holders of water rights. It is also possible that previous arrangements for the distribution of water to arable land persisted after the introduction of the code, as it did not manage to completely substitute prevailing customary practices in the distant rural regions.

The *mudawara* land is another land category which was not elaborated upon by Tute (1927), because it was not governed by the Land code. *Mudawara* – transferred – land refers to land, which was owned by Sultan Abdul Hamid as his private property but was taken over by the State after the Turkish Revolution in 1908 (UNRWA, 1956). Tute (1927) describes the *Mudawara* land as aquired by Sultan Hamid 'by gift, by private purchase and at auction sales' (p.120). However, this is not the only way the Sultan came to acquire these properties. Some landholders opted to transfer their *miri* possessions

to the Sultan in order to enjoy the crown land title and protect them from Bedouin attacks. Under the Ottoman Law, holders of land under the Sultan were not titleholders of any form presented in the code, but tenants of the Sultan (Tute, 1927). This implied that in addition to the tax that the tenants had to pay to the state, they had to pay one tenth of the land produce to the Sultan's treasury. According to the UNRWA report (1956), most of the land in the Jordan Valley, held under the *miri* title, was transferred to the name of the Sultan. Although Tute (1927) argues that, after the revolution, *miri* land of the Sultan's property was in part given to individual cultivators as *miri* by the new government, the UNRWA report confirms that this form of right to land continued even through the British Mandate. This situation changed, presumably, with the first land registry law enacted in 1933, when the Jordanian government offered the tenants the right to buy the land by paying the equivalent of ten times the land tax over a period of ten years.

The code attempted to abolish the customary system of *musha'* landholding. Article No. 8 in the code states that, 'the whole land of a village or of a town cannot be granted in its entirety to all of the inhabitants, nor to one or two persons chosen from amongst them. Separate pieces are granted to each inhabitant and a title deed is given to each showing his right of possession' (Tute, 1927, p.12). This is the first attempt of the closure of the commons in the region, by which the state aimed at maximising its tax revenues. The people did not want to be registered individually in the Ottoman books for fear of military conscription. Thus, *musha'* land was registered under one of the following two methods: Some plots were registered as held in common by all the co-owners specifying the proportional share that each co-owner held; others were registered under the possession of the chiefs of tribes whose members were the actual co-owners in the land.

This section demonstrated how access to and control of water resources was based on complicated principles related to land property rights grounded in religious laws and customary practices and influenced by the legal institution of the Ottoman code. Some of these practices prevailed after the establishment of Jordan and development of its legal systems. In some cases, those practices prevailed because the legal and technical changes did not take place immediately or because the changes where introduced in some areas before others. In other cases, even when new legislation was enacted, it could not be completely enforced because of those practices embeddedness in the social process, which triggered their change's resistance by the society.

IV.5 The Jordanian legal structures for the management of land and water resources

The overlap of complicated grounds governing land and water rights led to the emergence of many cases of contradictory claims. Registered state or private rights were in many cases challenged by customary rights of Bedouin tribes. Although the appropriation of unregistered tribal land by the Ottoman state led many tribes to register their land, it did not include all tribal lands in Jordan. Registration in many cases was done in a collective form, which lead to the spread of the *musha'* land

rights. *Musha'* land system was viewed by some scholars as an 'unmitigated socio-economic disaster' (Lancaster and Lancaster, 1999, p.304). On the other hand, with recent interest in CPRs, scholars perceive the *musha'* system 'to be successful at economic cooperation and in converting to intensive agriculture' (ibid). In the early 1930s and the following decades of development, the negative position against *musha'* system prevailed. Moreover, the status, which the Bedouins enjoyed as 'outlaws' free to move and raid other tribes and villages, jeopardised the fragile stability of the Emirate. The minimal contribution of the Bedouin tribes to the government treasury needed to be corrected in order to bring in revenues to a state, in desperate need for resources to establish itself as a stable country.

The Land Settlement Law was enacted in 1933 under the British mandate under the banner of settling all conflicting land claims between different tribes. The actual purpose of the law was to demolish the *musha'* system by parcelisation of land, marking the "end of corporate social control over land ownership in Transjordan" (Fischback, cited in Lancaster and Lancaster, 1999, p.39). Article 13 of the law stated that land held under *musha'* should be parcelised according to the shares stated in the list rights in the title deed. According to the land settlement law, land rights which were not registered at the Land and Survey Department would no more be recognised by the government and could be subjected to appropriation. The process was implemented in stages starting from the north, and continued until 1952 (Lancaster and Lancaster, 1999). Once an area was selected for land settlement, it became subject to the provisions of the law. Claimants to land rights had to put forward their claims to the department within thirty days of the announcement of the initiation of the procedure. The department would look into claims, try to solve conflicting ones and finally register the claims in return for a registration fee.

It was not until 1946 that a law was passed –Law No.38 of 1946- dealing with water rights. The law represented the first turning point in the history of water management in Jordan, as it gave the state partial control over the management of water resources and aimed at settling water rights claims. The Land and Survey Department was responsible for implementing the law as it formally linked water rights to land rights. Once an area was selected for 'Water Settlement', claimants had to put forward their claims to the Water Settlement Court, which would deal with the claims and register rights to water in a 'Water Rights List' –*Jadwal*- in return for a registration fee. Under the provisions of the law, water rights were considered ownership rights rather than right of access and had to be used for the benefit of the land it was registered under. The law maintained that a person whose land, which has a well or a spring, is leased would still have the right of access to the water within his/her land. The government took over water rights in the public domain without demolishing the private rights to water. The law gave the government ownership rights to all remaining waters sources after the distribution of water rights to the claimants. It also left the villages' water sources for domestic use as a public domain and insured that all villagers had access to that source. It can be argued that many of the aspects to water rights in this law were consistent with the provisions of Islamic *Shari'a*: the

division between water as a good for all in the public domain, prioritising the quenching of thirst as a free undeniable right, and water as a private right.

The significance of this law lies in the creation of a monitoring role for the state in the management of traditional irrigation systems. The director of the Land and Survey Department was granted the right to announce an area where water rights were settled to become an 'Irrigation Area'. Landholders in that area had then the right to apply for a license to build irrigation project to serve their lands. All other responsibilities regarding the construction and the maintenance of the project fell upon the landholders benefiting from the irrigation project. Landholders designed, built, operated and maintained the system at their own cost, which was similar to previously prevailing arrangements. The state's responsibility was limited to monitor the distribution of water rights according to the schedule and ensuring that the landholders fulfilled their responsibilities towards the system; non-compliance was penalised by the payment of fines.

In 1952, Land and Water Settlement laws were united under one law – No. 40 of 1952, demonstrating the limited achievements of previous laws. The law's significance lies in linking between water rights and land rights through the landholding deed. Water shares were distributed on the basis of land shares and distributed according to a time-based schedule monitored by the Land and Survey Department. This was only relevant to surface-irrigated lands, such as the mountain slopes in the Jordan Valley. In drier highlands and the desert, agriculture depended on underground water, which was unlimitedly extracted from private wells within the plots. The importance of the law also lies in the fact that it gave land, which lacked water rights, access to surplus irrigation water, in return to a certain fee. Those whose surplus water was channelled to their neighbours plot were compensated for their loss. However, access to water was not equal to water right; it was called 'right of flow' – *haq maseel*, which means the right for irrigation water to flow into a land providing it with the minimum irrigation water needed for the crops.

The land and water settlement processes inevitably led to confronting contradictory claims. Arising disputes involved contradiction between customary tribal claims, and between those claims and state's rights. Until today, the Land and Survey Department is dealing with disputed land claims. Interviews with *Idwan* tribe members of SJV revealed that there are still pieces of land that are claimed as tribal *musha'* land, which are disputed over between different tribes and the government, as well as between members of the same tribes. The *musha'* system had previously granted all the shareholders the opportunity to crop on different parts of the land as they rotated between the 'shareholders'. Thus, there was an equal distribution of access to 'good' and 'bad' land i.e. better soil quality, proximity to water source, etc. Shareholders knew from practice, which part of the land gave them better crop and once the parcelisation process started they competed, and fought, over the 'good' plots.

The introduction of new land laws did not completely abolish the particularities of the Ottoman code. While regulations changed, the Ottoman terms used to categorise land ownership – *Mulk* and *miri* – persisted. However, under the Jordanian law, m*ulk* land, which was confined to all areas falling within urban or municipal boundaries, implied absolute ownership, which gave the owner the right to use the land as "he" sees fit (Law No.43 of 1953). Nonetheless, it was rare to find agricultural land under such categorisation. Agricultural land in the Jordan Valley was under the *miri* categorisation – which was defined, similar to Ottoman code, as '... land to which a heritable right of possession (*tasaruf* or usufruct) is granted by the state to a private person, while the ownership (*Reqaba*) remains in the hands of the state' (UNRWA, 1956, p.7). The land code also gave the state the power to eject the holder of *miri* land if it was not cultivated for the period of three years.

The land and water settlement process was part of a wider process characterised by the development of governmental institutions for administrating the country and its socio-political and economic challenges. It aimed at establishing the state's authority through the introduction of laws. Those attempts of institutional building conformed to a certain extent with the values and beliefs governing prevailing arrangements for access to and control of land and water resources. As the Ottoman reform, the process of individualising land rights led to the transfer of property to urban merchants and Jordanian élite, who sought to increase their wealth through money-lending. The Northern Jordan Valley witnessed a process of property transfer under the new laws accelerated by droughts and crop failures of the 1930s and 1940s. Land was being transferred to owners outside the valley as well as within it. Local chiefs also became moneylenders and increased their property through debt closures. This led to a replication of the process of social stratification of Ottoman reform: Large properties became concentrated in the hands of absentee landowners and local chiefs, while peasants survived on subsistence production on extremely small property, leaving the poorest class of non-landholders to work as wage labourers in large properties.

The management of land and water rights remained the responsibility of the Land and Survey Department until 1959, when two major changes took place: first, the construction of the East *Ghor* Canal (EGC) and the passing of the EGC law; and second, the establishment of a central Water Authority. Under the provisions of the law no. 51 of 1959, a central water authority was established in order to take on the responsibility of comprehensive development of water resources in the kingdom and the management of its use, which was an important turning point in the history of management of water resources in Jordan. The law coincided with the commencement of the construction of EGC and the passing of Law no.14 of 1959, which gave the EGC Authority (EGCA) the autonomous authority over the management of land and water resources in the project area. Thus, although the Water Authority Law abolished all previous water management laws, the Jordan Valley and EGCA were excluded from its provisions. Except for a short period between 1966 and

1973, the Jordan Valley and the management of its land and water resources has always been the responsibility of an autonomous government institution initially under EGCA and lately under the Jordan Valley Authority (JVA).

The management of water resources in the rest of the country remained diffused between local, regional and national institutions[6], which caused overlapping of responsibilities and competition over water resources. This urged the Jordanian government, in 1983, to create a single agency to provide the institutional framework for the management of water resources. Although, the establishment of the Water Authority of Jordan (WAJ) aimed at centralising water management as a strategic national resource, the JVA remained autonomous in the administration of the Valley's water resources. What renders this institutional change as a 'turning point' in the history of water management in Jordan is that it gave the state a complete control over water resources in the country. According to WAJ law (No. 34 of 1983, article 25a), 'All water resources within the borders of the Kingdom shall be considered state property, whether such resources be surface or groundwater, territorial, riparian or inland seas waters, and may not be utilised or channelled save in accordance with the provisions of this Law'. Nonetheless, no substantial changes appeared regarding the control over the exploitation of underground water resources, which is an issue that keeps recurring in the Jordanian press, especially after the democratic turn in the Jordanian rule in 1989. Although a special code, issued in 1961 (no.14), gave WAJ the responsibility of monitoring underground water resources and the drilling of public and private tube wells, none of those legal structures were effectively enacted to control illegal access to underground water resources. This was due to the prevailing customary Bedouin rights, especially because they were being dug within formally registered private land.

In 1988, the Ministry of Water and Irrigation (MoWI) was established in order to improve the institutional performance of water management in Jordan and to co-ordinate the responsibilities of the Jordan Valley Authority (JVA) and the Jordan Water Authority (WAJ). According to the by-law No. 54, 1992, both the JVA and the WAJ operated under the Ministry, but maintained their financial and administrative independence. The Ministry took over the responsibility of policy and strategy formulation, research and development, economic and environmental studies as well as human resource development and public awareness programs (World Bank, 1997). JVA remained responsible for the overall development of the Jordan Valley including the management of water resources, while WAJ was responsible for the monitoring of water resources, regulating groundwater resources and provision of water and sewerage connections.

[6] The management of water resources was divided between the Central Water Authority (Law no.51 of 1959), the Natural Resources Authority (Law no. 37 of 1966) and the Domestic Water Corporation (Law no.56 of 1973).

In 1999, a five-year tender for the management and distribution of water resources in Amman, the largest municipal and industrial water consumer in Jordan, was granted to a French private company (LEMA). This change was brought upon the Jordanian government by the World Bank through the Structural Adjustment and Policy Support Projects (SAPS). In 1997, the World Bank's assessment of the water sector in Jordan deemed the Water Authority's performance as inefficient and unfeasible. The report urged the government to adopt a commercial approach to the management of water resources by increasing private sector participation, which is 'consistent with the SAPS study recommendations to increase commercial orientation of services' (World Bank, 1997, p. 20). The privatisation of the water sector in Jordan is so far limited to management contracts of the day-to-day operation. No proper studies have been carried out yet to assess the experience and there are no discussions on the arrangements for the management of water resources after the expiry of the contract.

IV.6 The Construction of East *Ghor* Canal – *The pinnacle of American ideology and technology*

The construction of the East *Ghor* Canal, which started in late 1958, can be safely considered the most important turning point in the history of water management, at the Jordan Valley level and the national level. This is *not* only because it was a major irrigation scheme, but also as a socio-political and economic turning point in the Jordanian history. The project marked the demolishing of existing land ownership patterns and CPRs for managing surface irrigation water in the Jordan Valley. At the international level, the project manifested Jordan's intention to expropriate the Jordan River unilaterally at a period of highly contested claims over its basin, especially as Israel initiated its own unilateral projects on the river (Reguer, 1993). Furthermore, the project was a realisation of the process of the settlement of the shifting tribes between the Valley and the mountain heights, as well as the settlement of the Palestinian refugees who flooded the Valley following the 1948 war.

The political and regional settings – the origins of the East Ghor Canal

The regional political circumstances prevailing during the 1940s and 1950s played a major role in the envisioning of EGC project and shaping its principles. The years following the 1948 war and the establishment of Israel were characterised by the continuation of the conflict between the Arab countries and Israel. Although the Arab states signed an armistice agreement with Israel under the supervision of the UN Security Council, the conflict with Israel was far from resolved. At the forefront of the conflict were two main issues: first, Israel's refusal to repatriate the Palestinian refugees to their homes and lands within the part of Palestine taken over by Israel in defiance of resolution 197 of 1948 and second, Israel's unilateral attempt to utilise the Jordan River by diverting it outside its basin through the National Water Carrier that transfers the water to the southern desert: a violation of the UN supervised armistice agreement (Rook, 1996).

The American government took a special interest in the region triggered by US patronage of the state of Israel (Rook, 1996), coupled with its strategic interest in creating a strong presence for itself in Jordan through exporting its ideologies of 'democracy' and 'development' to offset the expansion of communist ideology in the region. The administration of Eisenhower, in the early 1950s believed in 'water resource management as a diplomatic tool' (ibid, p.191) and the only way to avoid a new conflict. Through the joined development of the Jordan River Valley, the United States aimed at the 'resettlement of substantial numbers of Palestinian refugees and the strengthening of economic structures of riparian states with benefits to political stability of the entire area' (ibid, p.190), thus solving the refugees problem and ensuring its presence in the region at the same time.

The American approach for the development of the Jordan River Valley was based on exporting the principles of the American dream to the Middle East, which was also translated in the Zionist approach to the Arab land; that is the reclamation and development of 'worthless' arid land through the development of water resources 'regardless of prior rights' (Davis, 1999) for the settlement of 'new people'. The development plan itself was based on the American experience of the Tennessee Valley Authority (TVA) in 1933. The TVA aimed at achieving 'planned social development' through the development of the Tennessee River, which ran through nine states, through the distribution of the benefits of the project between the riparian states. The settlement of the refugees in the Jordan Valley would ensure the decrease of the UNRWA responsibilities and consequently would save the Americans, who were the largest contributors to UNRWA, tax dollars (Rook, 1996). In 1953, the American government laid down the blueprints of the unified planning of the Jordan River Valley development and started an intense diplomatic mission to promote the project. The exported American technologies and institutions aimed at developing an efficient use of the valley's resources, which would 'reproduce American virtues in an ancient land': 'economic opportunity, social harmony, political stability and cultural advancement' (Rook, 1996, p.9).

A private American company prepared the unified plan for the development of the Jordan Valley. The plan was controversial due to the fact that UNRWA commissioned the project, underlining its link to the settlement of Palestinian refugees. Syria and Egypt rejected the project because the implementation of a unified plan would imply that the Arab states recognised Israel as a state. The plan suggested the development of the upper Jordan and its tributaries through the construction of dams and irrigation canals. Lake Tiberias, which is part of Israel, was to be used as an international reservoir for the storage of the winter flows of the Jordan and *Yarmouk* River. The lower Jordan River, which is located on the borders between Israel and Jordan, was to be utilised by both countries through an extensive network of irrigation canals on both the east and west side of the river. Those canals were to be supplemented by dams on the *Yarmouk* River and the several small *wadis* flanking the valley to capture the runoff of the brief torrential winter rains (Rook, 1996). By 1956, the controversy over the project led to its reduction to an unsigned agreement over the share of water

each riparian state was allowed to utilise and by 1958 the United States accepted the reality that the Jordan Valley development was to be implemented through separate water projects.

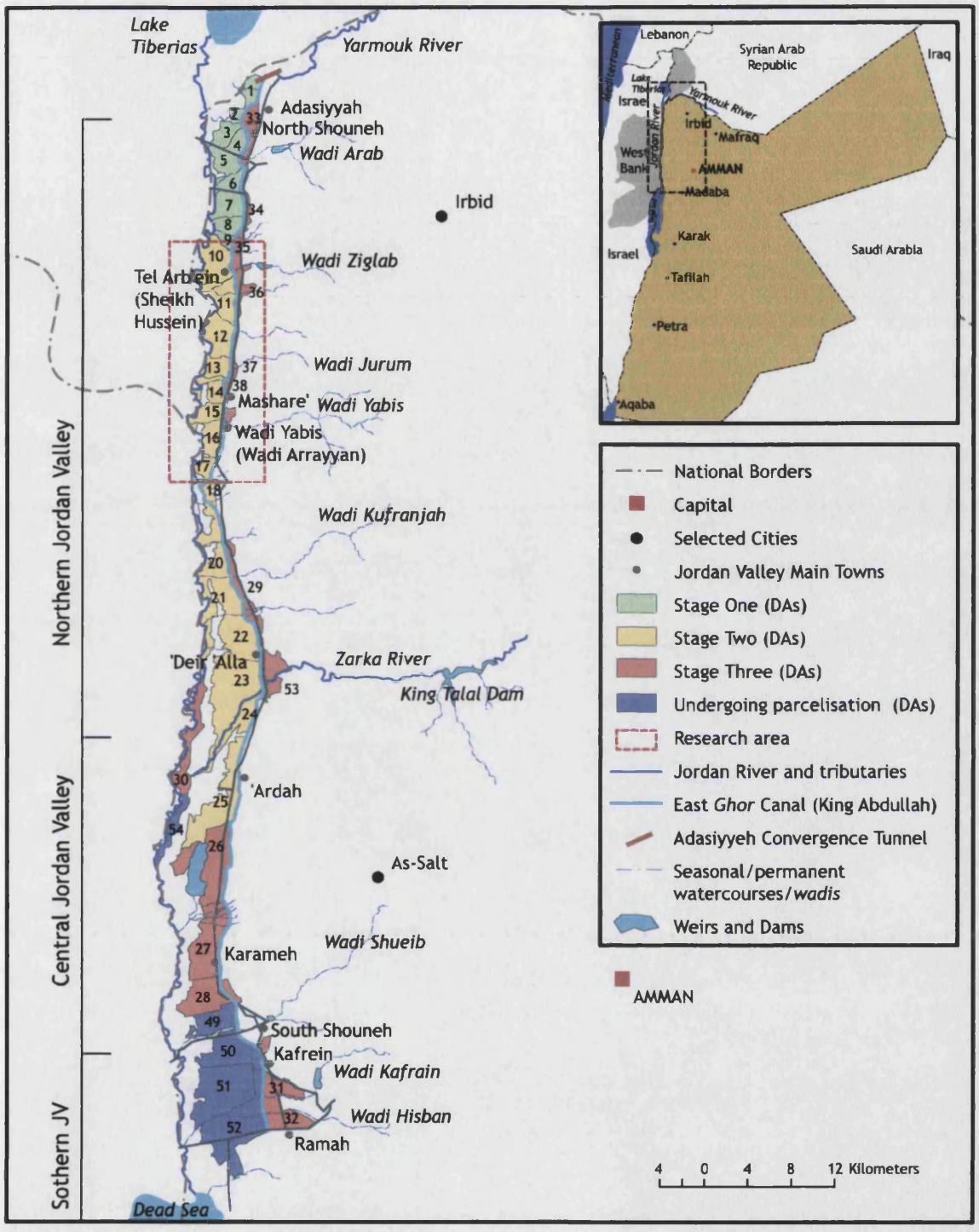
The underlying principles of the unified plan of economic development as means of social progress and raising the standard of living through the taming of water remained the underlying principles for the future projects in the Valley. Those principles guided the East *Ghor* Canal project, which was funded by the US government as it was urged by its special envoy to the region, Johnston, who wrote to his state department stressing the need 'to push the Jordan River plan as a vital element to the solution of the refugee question as well as a necessity to the existence of Jordan as a viable state' (ibid, p.221). The Jordanian government never officially declared its intention to settle the Palestinian refugees, especially at the time of the project. Nonetheless, King Hussein mentioned in his autobiography that the project could have 'enabled 100,000 or more refugees who had lost their homes because of the Israelis to earn their own living and regain their self-respect' (King Hussein, cited in Lowi, 1984, p.14). A government official confirmed that the EGC was supposed to encourage migration to rural areas, to relieve the Jordanian urban centres from the pressure of refugees (Interview, High ranking MoWI official, 24 July, 2000).

The project: its legal and institutional structures

The East *Ghor* Canal project, and its subsequent authorities, was the most important development project in Jordan. It became the largest bureaucratic investment in Jordan, capturing the largest share of foreign aid and private investment during the four decades following its construction, becoming a showcase of Jordan's development achievements (Van Aken, forthcoming). Since the construction of the EGC, the authorities that governed it enjoyed autonomous administration and were authorised to receive funding from international aid agencies. The project involved the partial diversion of the flow of the *Yarmouk* River where the water goes through one-kilometre tunnel, emptying into the East *Ghor* Canal parallel to Jordan River (Map IV.6, p.127). The initially announced canal plan was 70 kilometres long with hundreds of kilometres of smaller irrigation canals radiating for the main canal (Reguer, 1993). It was to be built in two consecutive stages between 1958 and 1968. The first stage was 23Km long and was transformed into nine 'development areas' (DA1 – DA9). This was followed by a 39Km stretch which was transformed into 16 'development areas' (DA10 – DA25), within which the research area is situated. The construction continued to extend towards the south reclaiming and irrigating hundreds of thousands of dunums[7] (d) of land. The project involved building a number of small dams to collect water from the sides of the valley and channel them to the canal. The work on the EGC and its parallel projects were halted more than once between 1967 – 1973 due to the Arab-Israeli war in 1967 and the following confrontations between the Israeli army and Palestinian *fida'yyein* who took control of the Valley, to launch attacks on Israel (ibid.).

[7] See footnote 7, Chapter III, p.84

Map IV.6: East *Ghor* Canal stages and development areas



Source: GTZ (2002)

The new irrigation networks were supposed to improve productivity of agricultural practices and improve the efficiency of irrigation water use. Concrete canals substituted mud canals, and government gatekeepers administrated water distribution according to schedules determined by the canal's authority (Interview, EGCA employee since the 1950s, 11 July, 2001). The new network called for the re-planning of agricultural plots. EGCA confiscated land in the project areas and redistributed it in units that were considered economically viable and better suited for irrigation. Large

landholdings of tribal chiefs and absentee landholders were considered unproductive because they were not fully utilised, while small landholders were cultivating on plots that were considered too small to be economically viable (ibid). Thus, the responsibilities of the EGC successive authorities included the redistribution and management of land and water rights in the project area. Those responsibilities expanded and took different forms and dimensions in the four decades following its construction. Appendix II offers a comparative description of the various laws and institutions governing the project and the Jordan Valley since 1959. The important provisions and changes, which legal and institutional structures brought upon the valley, are discussed below.

The changing responsibilities and doctrines of the successive authorities governing the EGC and the Jordan Valley can be categorised under two main periods: those before the six-day war of 1967 and those after the war. The time lapse which the project went through between 1967 and 1973 marks the shift in the definition of the project from a 'water project' to an 'integrated development' one. This differentiation is unmistakably clear in the titles and responsibilities that the successive laws stipulated on the governing authorities. The laws of 1959, 1960, and 1962, established the East *Ghor* Canal Authority (EGCA), which was mainly responsible for the planning, construction and management of the EGC as an irrigation project. The responsibilities included the reclamation and redistribution of agricultural land units and the control of the distribution of irrigation water to those plots.

The second period commenced in 1973 by the establishment of the Jordan Valley Commission (JVC), which was given the responsibility for the economic and social development of the Jordan Valley. The responsibility of JVC expanded beyond the project's area and involved the reconstruction of the infrastructure of the Valley and the construction of public services facilities. The establishment of the Jordan Valley Authority (JVA) in 1977, under the banner of 'integrated development', upgraded the authority over the Valley to become the first and only attempt at integrated regional development in Jordan. The responsibility of managing water resources extended to include its development for municipal, industrial and energy production use, in addition to its original responsibility to distribute irrigation water to the agricultural plots within the project area. JVA became responsible for town and housing planning in the Valley, the building of infrastructure and various public facilities, which would be handed over to the responsible ministries once completed. Because the establishment of JVA was a revival of the project's original 'inspirational' experience of TVA, it was also supposed to encourage civil corporate action through the establishment of "grassroots" organisations. Thus, JVA initiated and established the Jordan Valley Farmers Association (JVFA), funded by the government. All farmers in the Valley were considered members of JVFA, who democratically elected its board members. According to the law, the association was

shouldered responsibilities varying from contribution to the debate on agricultural policy in Jordan to giving agricultural loans and improving and marketing agricultural products of the Valley[8].

The period between 1959 and 1967 is characterised by the abolishment of land and water rights registered in the valley according to the laws of 1946 and 1952. The first 70 kilometres of the project were completed during the first period, gradually reclaiming and redistributing all water and land rights within the NJV. Agricultural land in the 25 DAs were confiscated and redistributed following the new irrigation networks. Previous holders of land and water rights were compensated for the decrease in the property after subtracting the value of their newly acquired agricultural units in the project DAs. The size of property was limited to a minimum of 30d and maximum of 200d. Aiming at creating a community of owners-operators in the valley, the 30d limit was considered the required area of land for a 'farming family' to work on to provide themselves with the minimum living requirements and project costs, which were the payments of the land cost and the O&M water fees. Acquiring land units in the project was based on five levels of priority. Initially, the first priority was for landholders who cultivated their land by themselves; the second priority was for landholders who cultivated their land by leasing them or through sharecropping; the third priority was for practicing farmers within the project areas, followed by practicing farmers within the sub-governorate and the fifth and final priority was to practicing farmers living outside the governorate. In 1962, all three types of practicing farmers were given priority over landholders who cultivated their land by leasing it or through sharecropping.

A few points need to be emphasised regarding acquisition priorities. First, landholders who cultivated their land using wage labour were considered landholders cultivating their land by themselves; hence, they had first priority to acquiring land. Second, although practicing farmers had the right to acquire land within the project, they were limited to only one agricultural unit not exceeding 30d-50d. Third, although landholders who utilised their land through sharecropping and leasing had last priority to land acquisition, in reality they had preceded practicing farmers, because of the contradiction in the consecutive canal laws. One of the most important provisions in the law is the provision, which specifies the area of land that old landholders have the right to re-acquire. This provision remained the same in all the laws of 1962 to 1988 and is detailed in table IV.6 (p.130). The provision implied that all those who previously held land in the area had unchallenged right to acquire agricultural land in the project. Moreover, previous landholders had the right to have at least 20% of their new acquisition within their old property. Only after all landholders acquired land within the project development areas were practicing farmers allowed to buy land units in the remaining lands, which limited their choices regarding the quality of acquired land.

[8] The performance of JVFA and the farmers' perception of its role are discussed in detail in Chapter seven.

Table IV.6: Size of new acquisition for previous landholders

Previous property size	Max. allowed size of new acquisition
30d -50d	30d-50d
51d – 100d	50d + 25% of area exceeding 50d
101d – 500d	75d + 17% of area exceeding 100d
501d – 1000	150d + 12% of area exceeding 500d
More than 1000	200d

Source: Law No.31 of 1962, Law No.12 of 1968, Law No.18 of 1977 and Law No.19 of 1988

Agricultural land within the project development area was classified into five categories; class 1 and class 2 being the most productive land, class 3 being less productive due to moderate to severe limitations in the soil, topography and drainage; class 4 being high in salinity but could become class 1, 2 or 3[9] by leaching and finally class 6[10], which was considered unsuitable for irrigated cropping because of extreme limitations in soil, topography and drainage. Initially only land of class 1, 2 and 3 was to be distributed. However, it seems due to the high demand on the project land, some farmers ended up with land of class 4 and 6[11]. The law provided for setting up a three-member committee called 'Farmers Selection Committee'; chaired by an EGCA employee with one of the other two members being a farmer of a 'good' knowledge of the area. The idea was that a committee member who is knowledgeable of the area would help in confirming that an applicant is actually a practicing farmer and whether he is known to be committed to his work and able to pay back his debt to JVA. In most of the project areas the local committee member was one of the local chiefs in the area.

During the mandate of EGCA (1959 – 1966), the services of the authority remained mainly focused on irrigation water resources. Domestic water was not piped to households; women and girls continued to daily collect water from nearby springs and water streams. It was only in 1981 that a code for domestic water connection and use was passed, and it took almost two decades to connect all 'licensed' households to the water network. Apart from the abolishment of irrigation water rights, the main change, which the project introduced to the farmers' practice, was 'water costs' as O&M costs, rendering them more acceptable to the farmers. Initially, the cost of irrigation water was set according to the crops, which were planted in the land[12]; bananas and rice were more expensive and trees were given irrigation priority in time of drought. In 1966, irrigation water prices was raised and fixed for all types of crops. The increase in prices effect on the total annual cost of irrigation water was more felt by cultivators of trees and vegetables in comparison to rice and banana cultivators[13]. The law did not provide for water for cattle, assuming that farmers would use their irrigation water

[9] 1d of class 1 and 2 land was equal to 1.7d of class 3

[10] The fifth category was called Class 6 probably to emphasize the inability to rehabilitate it.

[11] This was revealed through interviews with farmers who owned land of classes 4 and 6, not JVA landholding lists.

[12] See Appendix II.

[13] Assuming a 50d holding, and based on the quantity of water the code assumes that different crops required, the water cost on a banana cultivator increased by 3%, while it increased 20% for vegetable cultivators.

for their cattle, which overlooked the fact that the Valley was inhabited by pastoralist tribes that depended on cattle only for their sustenance.

Although the by-law code of 1966 gave the EGCA the authority to control and manage the drilling and extraction of underground water resources, it did not practice its authority to its full extent. This is because; first, the focus of EGCA on the improvement of agricultural production, which depended on the surface water provided through EGC in the NJV. The SJV was dependant on underground water wells, which the EGC could not substitute for. Second, the government's aversion to agitating Bedouin tribal chiefs by confiscating their customary rights in water extracted within their land. The code on underground water resources was lenient in comparison to that of surface water. Private access and extraction of underground water resources was allowed by license, which specified the amount of water to be extracted from the well. Apart from the license fees, water extracted from underground water wells was free, except in the cases of exceeding the maximum allowance for water consumption, which was difficult to quantify because no meters were installed on most underground water wells. Although the importance of underground water resources became more visible in the last two decades, the closedown on illegal water wells and the increased control over underground water resources did not effectually start until 2001.

Similar to development approaches of the time, the government's idea of the management of water resources was the development of resources for economic growth. The confiscation of water rights was an act of 'intensification' rather than an act of 'conservation'. The code on use of surface water for irrigation was geared towards encouraging water use to expand agricultural production. One of the provisions of the water codes of the 1960s imposed fixed fees per dunum per year for uncultivated agricultural land. Another gave EGCA the authority to provide irrigation water to lands classified as 'non-irrigated', after fulfilling the demands of irrigated lands. This explains the appeal class 4 and class 6 lands to underprivileged farmers, as they were able to irrigate those lands well into the 1970s.

The period of integrated development in the JV (1973 -1988) was characterised by the third stage expansion of the canal using modernised irrigation networks and the introduction of new technology to improve the efficiency of the irrigation systems and increase agricultural productivity. Farmers were encouraged to store water in pools and pump it to the land when needed. This practice spread after cement canals were substituted by pressurised underground water pipes. Farmers were also taught to use the sprinkling irrigation systems and to keep pumps and pipes in good repair. The cost of irrigation water continued to increase. In 1977, a new charging system was introduced, which was fixed regardless of the crop and the consumption level. The total annual cost of irrigation water doubled for banana cultivators, but tripled for all other types of cultivators. Besides the increase of irrigation water costs, the second period was characterised by the expansion of the authority of the

JV beyond the project area, confiscating more water rights in the side valleys up to 300m elevation above sea level.

The control of the authority over land rights also increased. Up until 1977, holders of agricultural land were allowed to sell their land to landless farmers residing in the project area. In 1977, transfer of land became restricted to the JVA and immediate family members. Consequently, mortgaged land could not be sold for debt closure and inheritors could not sell their fragmented property except to each other. The law of 1977 reinstated the priority of landholders to acquisition of land in the project over landless farmers. The definition of landholder was expanded to include those who held land through leasing for more than 15yrs, was given the fourth priority between the four types of landholders. The first priority remained for landholders who utilised their irrigated land by themselves; the second for landholders utilising their rainfed land by themselves and the third for landholders who utilised their land through sharecropping or leasing.

The last increase on water costs was introduced in 1989 doubling from 3fils[14]/m^3 to 6fils/m^3, which marks the beginning of the government's attempts to reduce irrigation water consumption in the JV, under the pressure of the World Bank. This was followed by the establishment of the Ministry of Water and Irrigation in by-law (No.54 of 1992). The establishment of the Ministry did not bring change to water property rights in Jordan, but created a new framework within which the JVA operated. The Ministry took over the strategic planning and water policy making in Jordan. The JVA and WAJ reported to the Minister, without losing their financial and administrative independence. The critical position of the World Bank and other unilateral aid agencies, such as USAID, to the Water Sector led to the initiation of the privatisation process in water management services. In practice, only the management of municipal and industrial water in Amman was privatised in 1999. In 2001, the Parliament passed a new controversial law for the JV, aiming at converting JVA into an economically viable institution: making it a for-profit agency.

The law abolished the exclusivity of JVA over the development of the Valley by giving it the authority to out-contract its projects and services to Jordanian or foreign investors. The mandate of the authority was expanded to include the rift Valley to the south of the Dead Sea in order to oversee the joint development projects which were agreed upon between the Jordan and Israel upon the signing of the peace treaty in 1994. The new law also allowed landholders to sell their land in the open market, which implied that all mortgaged land could be subjected to selling for debt closures. To minimise the adversity of this provision on the majority of farmers who were drenched in debt, the law stated that only after five years of enacting it, land could be sold for debt closure. To encourage large investments, landholding size limits were demolished. This gave the landholders of the SJV the right to reacquire all their property rights after the land parcelisation. Landless farmers

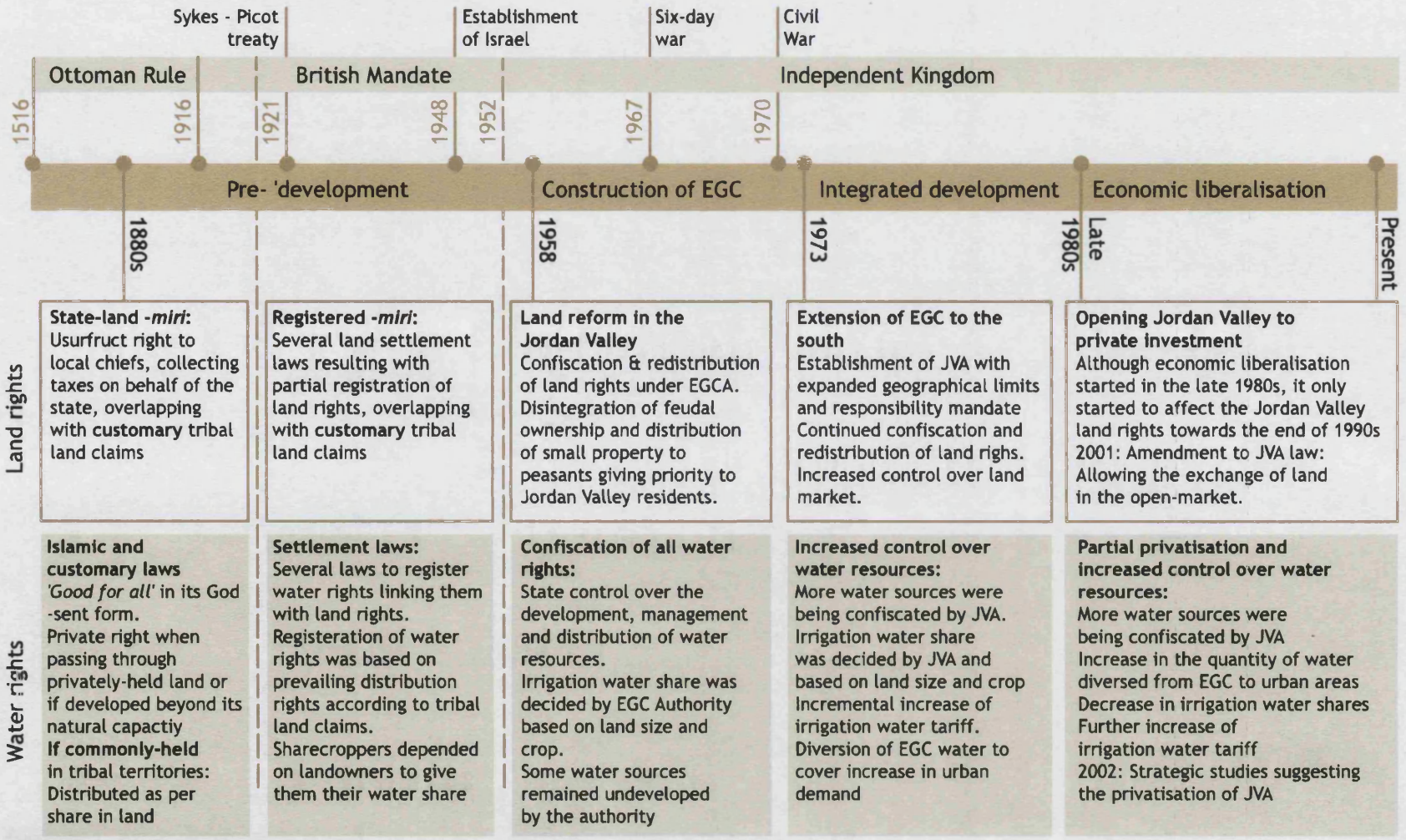
[14] JD1 = 1000fils = $0.71

would have the right to apply for one unit of land 25d-50d after original landholders re-acquired their holdings. The law also attempted to close down on illegal access to water resources in the Valley by giving the JVA employees of the court power to report violations and offences, as well as carrying out sentences. Although such provision emphasizes the increased control of JVA over water resources, the law leaves the management and development of water resources in the Valley open to privatisation.

IV.7 Conclusion: Turning points of the management of irrigation water resources – *A timeline*

The chapter presented the four turning points of the management of irrigation water resources in the Jordan Valley and the contexts through which they evolved (Figure IV.7, p.134): first, the pre-development period extending from the beginning of the century until 1957, which captures an envisioning of socio-environmental conflict during the late Ottoman period and the early stages of developing Jordan's nation-state institutions, when land and water resources were predominantly governed by customary practices inspired by Islam and partially ruled by the Ottoman land code. The second turning point is the construction of the East *Ghor* Canal starting in 1958 and ending with the six-day war in 1967, marked by the increased control of the state over the management water resources, which were distributed in abundance, highlighting the influence of large-scale intervention on the dynamics of socio-environmental conflict at the local level. The third turning point focuses on the dynamics of the conflict during the integrated development period, between 1973 and the late 1980s, characterised by intensified agriculture and increasing dependence on new technology. Finally, the present can be considered the fourth turning point as JVA is going through commercialisation in the context of economic liberalisation. Although a new intervention is difficult to assess, this change is playing a major role in the dynamics of socio-environmental conflict over water resources in Jordan and the Jordan Valley today. The dynamics of the conflict cannot be separated from the influences of the past nor the present. The following chapters explored those conflicts around these four periods, highlighting the inter-related influences of the previous periods on the conflict.

Figure IV.7: Timeline highlighting the four major turning points of the management of land and water resources in Jordan during the past century



CHAPTER FIVE

NORTHERN JORDAN VALLEY IN THE PRE-'DEVELOPMENT' ERA

Socio-environmental conflict prior to the establishment of the EGC

Introduction

The management of water resources in the Northern Jordan Valley in the beginning of the 20th century was an expression and reinforcement of power and social relations, which were also a reflection of historically and ecologically negotiated cultural and living practices. The authority of the *Ghzawi* tribe is acknowledged as the only dominant power in the research area at the time with their impact prevailing on social relations and agricultural practices. Symbolically, this authority was bestowed upon the *Emir* of the *Ghzawi* tribe, litigator of the region, its local chief and its connection with the 'outside world' – the state. In practice, it was achieved through material and cultural practices expressing the prevailing power and social relations. The social hierarchy, which dominated NJV at the time, was not drawn by clear-cut lines of large landholders vs. landless people. It was a complicated stratification created by origin, gender, labour relations, and dominant tribal values and practices, mediated within changing ecological and historical conditions.

Within this setting of multiple overlapping unequal power-relations, two features symbolically concealed its effect on the dynamics of socio-environmental conflict: Islamic values as an equalising social system and the *madafa*, guest house, as a forum of debate and the closest congregation to collective action in the area. The chapter commences by presenting the *Ghzawi* presence and relation with other social groups of different origins in the NJV. The 'moments' of the social process will be employed to unveil dynamics of socio-environmental conflict prior to the establishment of EGC. The analysis uncovers facets of inequality within NJV, starting with that of access to land, and expands to highlight the complexity of inequity and its embeddedness in wider aspects of the social process; such as social relations, material practices and discourse. Through the exploration of land and water management regimes this chapter demonstrates a complex relation developing between fellow human beings, their surrounding nature and God – the triangle through which they survived, mitigated and attempted to change their own realities. The analysis in this chapter is based upon historical information acquired from books, researches and Ottoman archives as well as interviews with male and female elders in the region.

V.1 The *Ghzawis* and associated clans in the Northern Jordan Valley – *The establishment of authority and alliance*

As mentioned in Chapter four, in the beginning of the twentieth century, the region in which present *Sheikh Hussein, Al-Mashare'* and *Wadi Arrayyan* are located was inhabited by dispersed groups of semi-nomadic and nomadic Bedouins and peasants of different origins residing within the Valley all year long, under the recognised chiefdom of the *Ghzawis*. The authority of the *Ghzawi* tribe, instated in and demonstrated by their *Emir*, was derived back in the 16th century, when the Ottomans were trying to expand in the region. Although faced by their fierce resistance in *Ajloun*, the Ottomans managed to defeat the *Ghzawis* and opted to appoint their chief as the ruler of the area. *Ajloun* became the centre of *Liwa' Ajloun*, which was considered the most important and developed of all in the *Syrian Province*. It contributed substantively to the *Province* budget and provided its military force with substantial numbers of soldiers. As rulers of *Ajloun*, the *Ghzawi* tribe provided security to the region through their own forces. They also collected taxes from the subjects of the Ottoman Empire on behalf of the state and managed the Syrian pilgrimage troupe (Bakheit and Hmoud, 1990), which expressed the extension of the Ottomans religious patronage and power over the region along the route towards *Mecca* in *Hijaz* of Arabia (Kareem, 2000).

The Ottoman registry book of *Liwa' Ajloun* during the 16th century indicates that the most prominent local ruler in the 16th century was from the *Ghzawi* tribe (Bakheit and Hmoud, 1990). The translation of another Ottoman registry book (No.970 by Bakheit and Hmoud, 1989), which documents the state's share of agricultural product indicates that out of 149 village in *Liwa' Ajloun* 41 village were the right of the *Emir* of *Liwa'*, which was from the *Ghzawi* tribe. The peasants during that period did not have private rights to land. The ruler, *Ghzawi*, was given the right to control the land from the Ottoman state in return for the collections he does from the peasants who cultivate it, as well as the participation of his own troupes in military actions. Peasants paid a fee in order to get *usufruct* right to land and then had to pay a share of the product to the *Emir*, who in return would contribute a share of that to the state. If the *fallah* –peasant- was not able to produce satisfactorily within two years, the *Emir* had the right to withdraw the *usufruct* right from him/her.

The *Ghzawi* chiefs remained the rulers of the area only until 1587 when they were pushed out of the area towards the Jordan Valley by other local tribes in *'Ajloun*. Although there are no documents or accounts of their arrival to the Valley towards the end of the 16th century, accounts describing the area in the 18th century refer to the presence of the *Ghzawi* chiefdom in *Tell el-Arba'ein* – old *Sheikh Hussein* – demonstrating their ability to establish their own territory in the Valley sandwiched between *Sukhur Al-Ghor* further to the north and *Bani Sakher* in the Central and Southern Jordan Valley. *Wadi Ziglab* bordered the territory of the *Ghzawi* authority from the north and *Wadi Al-Yabis – Arrayyan*, hereon – from the south. It extended beyond the River to include the western bank of the river and the hills bordering the valley in the east, which served as their summer camp. Although the *Ghzawi*

tribe is a small tribe in comparison to *Sukhur Al-Ghor* to the north or the mighty *Bani Sakher*[1] to the south, they managed to establish for themselves and to provide to the peasants of the region a safety haven to thrive within a territory characterised by hostile encounters. This might be due to the well-established connections between the *Ghzawis* and the Ottoman state and their ability to defend themselves using organised forces since the 16th century. This could have been the reason behind the respect and authority the *Emir* of *Ghzawi* acquired from the peasants of the region at the time of their arrival, reinforced by the Ottoman state's endorsement of the *Ghzawi Emir* as the area's prominent leader.

It is difficult to assert how the *Ghzawis* came to riches in the Jordan Valley. They had already acquired wealth during their rule in *'Ajloun*. The region they shifted to was deserted due to Bedouin attacks, which probably made it possible for *Ghzawi* chiefs to claim right to the land under the customary practice, *wade' al-yad*. The inhabitants of the area narrate a popular myth that basically says that in the 16th century a poor man from Egyptian origin came to the mountains of *Ajloun*, with his family, from Gaza – hence *Ghzawi*. He chose a cave for his family, which was occupied by a snake and all those who previously tried to live in it died within one night of their stay. The man forbade his family from drinking from the water hole inside the cave and watched as the snake drank from it. The myth goes that the snake used to poison the water of the cave, but on the following day the snake drank from the same water and was poisoned by its own poison. Only then, the man approached the area and found a large hole full of gold. It is thought that the man used that gold to bribe government officials and obtain position in the Ottoman state (Several interviews, in *Sheikh Hussein*, July, 2000; 2001, Peake, 1958). The narration of this myth by the peasants of NJV has two significances regarding the local perception of the *Ghzawi* tribe. First, it reinforces for the peasants that the *Ghzawis* are of no better origin than they are; and second, it emphasises some current perception that the *Ghzawi* tribe uses bribery to obtain benefits. Many, including *Ghzawis*, use the myth to demonstrate the wittiness of that great grandfather of the *Ghzawis* and, by heritage, the *Ghzawis* themselves.

Although, today, the majority of peasants dissociate themselves from the *Ghzawi* tribe, this was not the case during the first half of the 20th century. In the 1950s, Peake (1958) carried out the only study of the Jordanian tribes at the time. According to Peake, three major tribes resided in the *Ghor Nahiyyah* – sub-district of *'Ajloun - Al-Bashatwa, Sukhur Al-Ghor and Ghazzawiyya*. The first two resided to the north of the study area. Peake (1958) listed sixteen clans attached to the tribe, which can be categorised[2] as follows: peasants who originally resided in the Valley, peasants who came to the valley from other parts of Palestine and *Transjordan*, and peasants who came with the *Ghazzawiyya* as their slaves. The study mentions another two non-peasant families: *Kan'aan*: a Palestinian section of the

[1] The total census of *Bani Ghzawiya* in 1881 was 500, while that of *Bani Sakher* was 4000 (Kareem, 2000).

[2] Names of peasant tribes, regardless of descent, are not mentioned as the author does not wish to contribute to the impact of such stigma on those clans who are hardworking productive members of the society.

Ghazzawiyya and *Zainati*: A Palestinian clan considered *Ghazzawiyya* due to constant intermarriage. This demonstrates that until the 1950s all the tribes in the NJV preferred to be associated with the *Ghzawis*. Such alliance provided weaker clans with a sense of power or security derived from their association with a powerful tribe. For the *Ghzawi* tribe, this association reinforced its power as the alliance of smaller clans provided them with extra strength in face of outside attacks. It also guaranteed the *Ghzawi* tribe the conformity and loyalty of those clans – a reinforcement of their symbolic power.

V.2 Territorial claims and land rights in Northern Jordan Valley

As Chapter four revealed, land ownership patterns in the Jordan Valley were dictated by the complicated overlapping of codes, laws and customary practices. Thus, information regarding land ownership patterns prior to the formal registration of land rights relies not only on documentation, but also on interviews with experts, old residents of the area and deductions made from historical references. Understanding land ownership patterns prior to EGC project involved researching those patterns during the Ottoman period, first, which set the stage for the power relations that prevailed in the late 19th century and the beginnings of the 20th century. As mentioned in Chapter four, people were reluctant to register their land rights during the Ottoman rule to avoid taxation and military conscription. This tendency persisted well into the 1930s with the new state land settlement attempts, which slowed down the process. However, by the time of the project land rights needed to be formally registered for their owners to claim compensation and access to land in the new project.

Land ownership in the areas overlapping within EGC project development areas (DAs) in NJV took several shapes since 1888-1889, which is the oldest Ottoman record found during the fieldwork that mentions the region. Those records only mention *Ghor Al-Arba'ein* village, as part of the sub-district of *'Ajloun*, whose borders are consistent with the borders of the researched area. The village was associated with *Amal Baisan* region, which NJV became part of in the administrative divisions of the 18th century[3]. In contrast to all the other landholdings found in annual registrar of 1888 – 1889 (Ottoman records, H1304, pp. 101 – 2), the entire *Ghor Al-Arba'ein* was registered under the name of *Sultan Abdul Hamid*, and did not contribute income to the state treasury. In the summary book of the state's income between 1879 and 1910, the area of research was registered under the sub-district of *Ghor Baisan* and the village was given the name of the 'lands of *Ghzawi Arabs*', but *Sultan Abdul Hamid* remained the titleholder of the area, which did not provide any income to the state (Ottoman records, H1327, pp. 1 – 3). This confirms that the region occupied by the *Ghzawis* in NJV was categorised as *mudawara* land until it was registered to individual and collective claimers under the provisions of Land Settlement Law of 1933. Interviewed members of the *Ghzawi* tribe did not reveal this information, but they confirmed that their grandfather only registered their land in the 1930s.

[3] See Map IV.3.a, p.104

Anyone asked about the landholders in the region prior to the construction of EGC would say that the *Ghzawis* owned the entire region. None of the interviewees witnessed the 1930s as adults and their answers are attributed to information passed to them by their ancestors or to the fact that the *Ghzawis* had in fact major landholdings in NJV prior to EGC project. In actuality, documented land ownership prior to the confiscation of land for the EGC project purposes (Table V.2) reveals that although the *Ghzawis* ownership was substantial, it was not exclusive within NJV. In 1962, the registered landholders in NJV included[4], *Ghzawi*, *Zainati*, peasants of *Ghawarneh* origins, peasants of slave ancestry, Palestinian refugees, residents of the *shafa* –mountain sides- and outsiders and urban dwellers of both Jordanian and Palestinian origins. The *Ghzawis* had the highest property holdings in the northern part of the study area: 74.52% of total title-held area in *Glai'at* and *Al-Hamra*, and decreased towards the south reaching 1.43% in *Al-Rasiyyeh* and *Kafrabil* at the southern outskirts of *Al-Mashare'*, with no registered land in the *Wadi Arrayyan*. However, the *Ghzawis* total ownership was considerably large as only five individuals and/or their male children held it, while the holdings of the peasants and refugees were distributed between more individuals in smallholdings. Urban dwellers, whose property in the valley did not exceed 11.87%, were also a handful of affluent individuals who took advantage of the commodification of land property offered by land settlement of 1933 to buy large landholdings.

Table V.2: Percentage (%) of landholding area for different groups in towns and villages over lapping with research development areas in 1962

	Sheikh Hussein		*Mashare'*			*Wadi Arrayyan*			
	DA10	**DA11**	**DA12**	**DA13**	**DA14**	**DA15**	**DA16**	**DA17**	**All Areas**
Ghzawi	74.52	37.48	51.79	10.96	1.43	0.00	0.00	0.00	**29.83%**
Zainati	0.00	0.03	0.22	0.00	1.39	33.84	27.30	0.00	**6.75%**
Peasants-S	6.31	6.77	8.05	6.86	8.07	0.00	0.00	0.00	**5.24%**
Peasants-G	3.73	1.80	5.34	35.91	7.92	3.88	1.17	0.00	**6.45%**
Refugees	0.76	1.76	1.57	3.47	0.75	33.91	56.04	55.76	**14.02%**
As-Saqer	0.00	0.18	1.13	0.25	0.42	0.00	0.14	5.66	0.62%
Turkman	0.00	0.00	0.00	0.00	0.00	33.91	55.90	50.10	12.59%
Other	0.76	1.58	0.44	3.22	0.33	0.00	0.00	0.00	0.81%
Shafa residents	4.41	42.93	28.12	26.15	42.93	5.12	11.35	41.15	**24.63%**
Outsiders and Urban dwellers	8.20	5.58	3.94	16.62	37.51	23.02	4.14	3.09	**11.87%**
Unidentified	2.07	3.65	0.97	0.03	0.00	0.23	0.00	0.00	**1.21%**
	100%	100%	100%	100%	100%	100%	100%	100%	**100%**

Source: Calculations based on Ministry of Water and Irrigation data, 2001

Unfortunately, the gap in the information on land holdings in the NJV between the Ottoman records of late 19th century and the Land and survey department prior to the land confiscation in the late 1950s leaves substantial questions about land ownership patterns to speculation. This 'black-hole' period can be divided into two main phases: that before the Land settlement laws of 1930s and that following it. The far-reaching authority of the *Ghzawi* tribe, which is still present in distant memory

[4] Appendix III offers detailed tables of land ownership patterns prior and after the construction of EGC

of the residents of the area, turns the attention to the customary means of access to land - 'territorial claim'. It seems the *Emir* of the *Ghzawi* claimed territorial control over the entire region when it was registered under *mudawara* property. This could have been an arrangement, which the *Emir* reached with *Sultan Adbul Hamid* to avoid taxation in return for a smaller contribution paid to the *Sultan*, which must have offered a lucrative income to the *Emir* by cultivating the land 'tax-free' and collecting contributions from other farmers utilising agricultural land within the territory. Tribal territories, however, were usually larger than the actual area, which those tribes utilised, whether as pastors or for cultivation. According to the Palestinian refugees who migrated to the *Wadi Arrayyan* in the 1950s, the region was almost deserted except from scattered insignificant nomadic groups. Thus, although the authority of the *Ghzawi* tribe expanded from the 'seat of its throne' in the northern end of the territory in *Al-Glai'at* to *Wadi Arrayyan* in the south, the actual presence of the *Ghzawis* did not extend beyond the lands flanking *Wadi Jurom* to the north of *Wadi Arrayyan*. Probably *Wadi Arrayyan* was considered a buffer zone between the *Ghzawis* and the hostile *Bani Sakher* to the south.

The process of land settlement which commenced in the 1930s and continued till the 1950s must have led to the reduction of the *Ghzawis* territories in the region, but also created the opportunity for property exchange. Due to the fact that the responsible settlement committees were unable to meet all claimers, they relied on the information given to them by heads of tribes, which led to the registration of most of the lands in the names of the tribal chiefs and their inheritors (AADO, 1984). However, many landless peasants managed to get access to land property by clearing the *Kathar* land, which was considered unsuitable for agricultural practice, and cultivated rainfed crops on those small plots. Reclamation of *Kathar* land was also a form of breaking out of the controlling system of *muraba'a*. The land settlement and registration process opened the possibility for those who survived on cultivating small plots to register those lands by proving *Wadi' Al-yad*. Considering that the process aimed at settling Bedouin tribes to reinforce the authority of the newly established state some of the major clans in the NJV, who were previously attached to the *Ghzawis*, managed to collectively register small territories of their own. In *Al-Mashare'*, four clans of *Ghawarneh* peasants acquired land on the riverside - *Zor*. Each of those territories was then named after the clan – *Zor* of *Rayahneh*, *Zor* of *Gweisem*, *Zor* of *Al-Khashshan* and *Zor* of *Al-Kafarneh* (Interviews with elders of each clan, August, 2001). However, in the north closer to the 'seat' of the *Ghzawi* power, only four individual peasants from NJV managed to register small property in their names; two of those were from slave ancestry.

The peasants' acquisitions in NJV were not as significant to the *Ghzawis* property as those acquired by residents of *Shafa* -mountainsides. The percentage of the *Shafa* residents' holdings became comparable to that of the *Ghzawis*, reaching 24.63% of the total area in NJV. Despite that, the *Shafa* residents did not have the same forceful presence in the Valley as the *Ghzawis*: first, because they continued to reside in the mountain sides; and second because their property was distributed

between larger numbers of owners, restricting the possibility of the ascendance of rival local chief. Probably because *Wadi Arrayyan* was not utilised by the *Ghzawis*, they lost their claim to it. The granting of those land rights to *Zainati* chief in exchange for his land in Palestine confirms that those 'unclaimed' lands became state property. Nonetheless, the *Ghzawi* chiefs remained holders of large land property and their authority remained recognised by the residents of NJV. In fact, the registration process placed land property in the open market allowing *Ghzawi* chiefs and urban élite to buy more property from peasants who found themselves in need of capital in an age of monetarisation.

V.3 Labour relations in agricultural practices – *Social hierarchy and material practices*

Similar to Mosse's (1997a) example of tank irrigation system in Tamil villages, where caste relations guided water distribution tasks[5], labour and contractual relations in agricultural land and consequently distribution of water resources in NJV reflected the social hierarchical relations based on tribe and origin. Labour relations in agricultural practices were as much determined by social and power relations as they were mediated through landholding patterns. As land claims became more asserted in the valley, landholders needed to make use of it. The weak and impoverished clans and slaves descents of the Jordan Valley were the new labour force that started the agricultural operation on a worthwhile scale in the area (Abujaber, 1989). Before the systemisation of land ownership in *Transjordan*, land property was measured by the unit of *faddan*, which literally means a pair of oxen. Abujaber (1989) defines the *faddan* as the area of land cultivated by a yoke of oxen during a whole season. This implies that it takes one farmer to handle one *faddan* of land. The area of a *faddan* varied between 80 – 150 dunums; in NJV it was 120 dunums. One family unit was able to cultivate one *faddan*: the male head ploughed the land and his wife and children helped him to sow, harvest and bundle the crop. Large landholders needed labour in order to utilise their many *faddans*.

Sharecropping was not only a form of labour relation in NJV. It was also an expression of power, patronage and alliance. Before exploring the symbolic meanings of sharecropping, it is important to clarify the different forms of practiced labour relations in the NJV. As mentioned in Chapter four, sharecropping was practiced in two main forms: *Muraba'a* and *Muzara'a*. Although the word sharecropping implies a form of partnership, in NJV only *Muzara'a* was considered a partnership and is called *Gisem* - sharing. *Muraba'a*, on the other hand, is closer in practice to commodified labour where a person is only paid for his/her labour. However, *muraba'a* was regarded different from wage labour because it provided annual contract, as opposed to casual wage labour. In the *muraba'a* arrangement, the workers, who were called *murabe'* – or ploughman: *harrath* – ploughed and harvested the agricultural land all year long in return for one quarter – *rubo'* – of the land product in kind, in addition to free food and lodging. This practice was exclusive to men, as women were not considered able to plough or harvest.

[5] Chapter One, Section I.5, p.53.

Large landholders usually hired one *harrath* for each *faddan*. Most of the *Ghawarneh* peasants of different ancestry worked as *harrathein*. Even those *Ghawarneh* who had land titles preferred to work as *harrathein*, because they did not have the means to cultivate their own small property or because they preferred the security of the arrangement (Interview, *Ghawarneh* peasant male, *Mashare'*, 30 May, 2001). The quarter of the produce was given after the tax or land rent was deducted from the total produce. The cost of food and lodging was also deducted from the gross total of the land produce towards the beginning of the 20th century and the value of *rubo'* was reduced to one fifth of the produce (Abujaber, 1989). Abujaber calculated that in reality the *murabe'* share in the produce fell from 21.9% of the produce in 1900 to 16.7% in 1911. Abujaber's conclusions are based on documented agricultural 'establishments', which were not located in NJV. However, his assessment of agricultural practices in *Transjordan* holds truth even for undocumented regions such as NJV. Many of the interviewed farmers in the research area seem to recall with bitterness that '... one used to work all year long for a *shawl*[6] of wheat!' (Interview, Ex-*harrath* for the *Ghzawis*, slave ancestry, *Sheikh Hussein*, 4 June, 2001). The calculations of the produce and the *harrathein* share, sometimes, get subjected to the manipulation of unfair landlords. Another interviewee, whose father used to work as *Harrath* said, '... besides the food, we had nothing!' (Interview, Male *Ghawarneh* peasant, *Mashare'*, 17 June, 2001).

Despite its harsh realities, peasants preferred *muraba'a* to the worse possibilities of unsecured casual labour. *Muraba'a* also made it possible for them to have secure homes under the protection of the *Ghzawis* (Several interviews, ex-*harathein*, *Sheikh Hussein*, June and July, 2001). The relation between the *harrathein* and the *Emir* of *Ghzawi* extended beyond the Marxist-defined labour relations. It was a societal relation mediated through power and material hierarchy. Being a *harrath* for the *Emir* implied the enjoyment of his support and protection. It also reinforced the person's clan attachment to the *Ghzawis* giving them a sense of belonging and false 'superiority'. To the *Emir*, those *harrathein* were considered 'his men', they fought with him and demonstrated his authority. However, at his territory level, the *Emir* in some cases would restrain his *harrathein* from picking up fights with other landlords' *harrathein* or farmers to preserve his reputation as the only guardian and authority in the area. Also, in contrast to classical Marxist theories of labour, the *harrathein* were not regarded as a class in which all workers are equal.

The *harrathein* must have recognised the exploitative nature of their status, but being unable to change their realities tended to emphasise the 'origin' hierarchy existing within. Peasants of *Ghor* origins tended to look down at peasants of slave ancestry and insisted on referring to them as *'Abeid* – slaves. Although there is no documented proof of different origins, the peasants of the NJV seem to differentiate each other under those two categories. Even within different clans of slave ancestry,

[6] *Shwal*: a sac that holds around 20Kg of wheat

some clans seem to be perceived as more subordinated to the *Ghzawis* than others. The influx of Palestinian refugees in 1948 provided the peasants of slave ancestry with another group, which they could look down upon as inferior. Especially at the outset of the crisis, almost all the refugees who came to NJV were homeless, landless and with no means to support themselves. However, the status of the Palestinian refugees did not remain so for long.

The *muzara'a* arrangement provided those aspiring more independent lifestyle with an alternative practice, which needed resources in order to be carried out. In NJV, there were two main forms of *muzara'a*: In the first case, landlords offered the land and water and contributed to 50% of the costs of seeds and fertilisers. Within this arrangement, the landlord and the farmer would share the produce in 50:50 ratios. In the second case, the landlord only offered the land and water, while the farmer bore the cost of seeds and fertilisers. In this case, the landlord received only 40% of the produce and the farmers received the remaining 60% (Male Palestinian farmer, *Sheikh Hussein*, 25 April, 2001). *Muzara'a* had more variations to its practice: contributions of both partners to the costs used to vary and consequently the share in produce varied as well. The division of the produce used to be usually done in kind. In cases when they sold the produce in the neighbouring city of *Baisan*, the farmer – *fallah* – brought an invoice to the landlord and gave him his share in cash.

The *Muzara'a* positioned farmers at higher social level than *harrathein*. It implied more risk and in some cases did not provide more income to their families. But those who chose to practice it had the resources to survive upon until the end of the season. Most Palestinian farmers, who initially started as wage labourers when they arrived to the valley, shifted to *muzara'a* as soon as they could. In contrast to the relation of peasant *harrathein* with the *Ghzawis*, Palestinian refugees did not perceive such relation beyond its material purposes and preferred the independence of *muzara'a* despite its risk. 'The farmer is God's guest' they say – which means they prefer relying on God's mercy to feeling in awe of those who they work for (Interview, Male Palestinian farmer, *Sheikh Hussein*, 10 July, 2001). The Palestinian farmers practiced *Muzara'a* on land owned by *Ghawarneh* peasants, who preferred an insured income to working all year long and risking loss (Interview, *Ghawarneh* peasant, 2001).

V.4 Agricultural practices and irrigation water management – *Practical knowledge, fatalism and the 'Amarah'*

Agricultural practice in the NJV prior to EGC project demonstrated a negotiated understanding of nature, human capacity and social relations under the divine power of God. Peasant practices in the late 19th century emphasised the importance of practical knowledge, which they acquired about their own limitations in agricultural practice. One example is found in Merril's (1881) description of wheat fields in the NJV, which demonstrates one form of farmers' adapting their practices to their own capacity: 'I noticed wheat at three or four different heights, generally two or three in the same or

adjoining fields, and I learned that a difference of a few days was made in sowing of these, in order that the grain might not all ripen at once' (p.180). The peasants recognised the limitations of their numbers as a work force and sowed their fields accordingly, in order to harvest over a longer period of time.

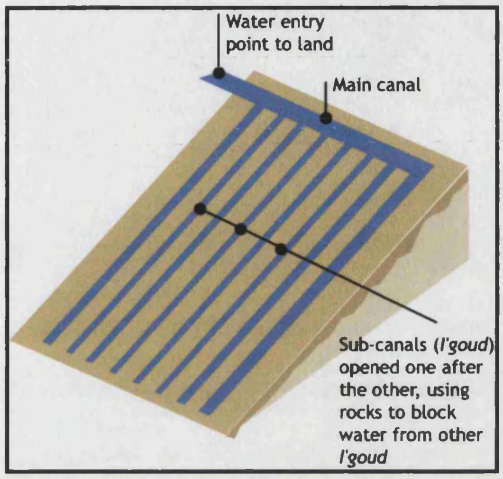


Figure V.4.a: *'Agged* illustration

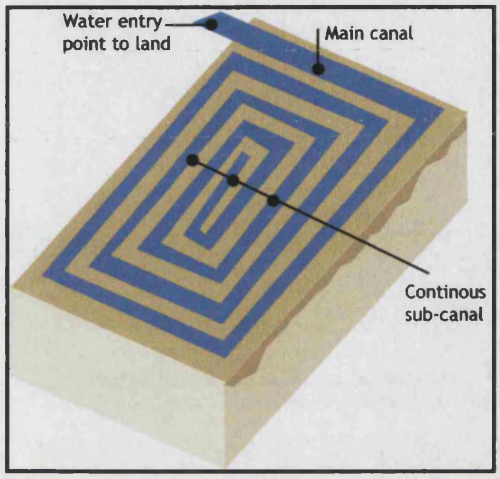


Figure V.4.b: *Dulab* illustration

Agricultural practice in the valley, then, expressed the negotiated understanding of the environment, human capacity and living practices. Farmers cultivated crops according to the rain season (Several interviews, male and female farmers, 2000 and 2001). They employed simple technology to manage the distribution of surface water, using spades and mattocks for cultivating and operating water flows, and levellers for making the beds for sowing. Grain crops were grown on land flooded by runoff waters, sowing seed directly onto soil after the first rain, and covering it using branches and hand harvesting (Lancaster *et al.*, 1999). In cases of sloping lands, farmers dug sub canals in their land in parallel straight lined arrangements, called *l'goud* as water could flow through them by gravity (Figure V.4.a). In flat lands, they dug the canals in angular spiral forms, *dawaleeb* (Figure V.4.b). This continuous canal depended on the pressure of the water flood to be amplified in order to flow from one end of the canal to the other. Farmers needed to stand by to make sure that water flowed to the end of the *dawaleeb* or to shift from one subsidiary canal *'aged* to another. The timing of the water turn was not easily suited with daily reproductive roles of women, which made it difficult for them to be the primary caretaker of an agricultural practice. Strong youthful men were usually the ploughmen and irrigators. Women and children cleared the land, harvested and made bundles.

Depending on the rain season and the availability of water in *wadis,* farmers decided whether they should start a summer season and the area of land to cultivate. Landlords and peasant farmers used to plant part of the land – *Wajiha*, which means side – with wheat and barley or corn, leaving the other side for their tent dwellings and cattle pastors. The combination of pastoralist and cropping practices guaranteed sustenance for residents of the NJV: they produced their grain and dairy products in one 'operation'. They also allocated a small part of the land for vegetable garden for their

own consumption. This combination was a reinforcement of a life style: they lived, cultivated land and took care of their cattle as a family. The land was not only a source of material production but also a habitat through which they interacted with their environment and with each other as a family, planting only as much as available water allowed them. The planted *wajiha* was also divided into two parts one for summer crops and another for winter crops alternating each year between *wajihat* and crops in order to allow the soil to renew itself. The presence of cattle also provided them with natural means to fertilise and clear the land after the harvest in preparation for the following season as the cattle grazed on the remaining stems and roots of the crop.

The farmers of NJV perceived water as an important resource intrinsic to the continuation of their livelihoods and ways of life. Their life histories could be told through episodes of abundance and scarcity. Water availability used to be their calendar: 'the year it rained in June', 'the three years of draught' or 'the year of the flood'; those were the ways old people remembered their lives histories (Several interviews with male and female elders, May and June, 2001). Although they could utilise water, divert it to their lands and control its flow, they always felt helpless when it came to quantity of water 'God' would send them that year. However, anyone asked about the availability of water in the 'old days', s/he would say, 'we had lots of water – springs, canals, *wadis*' (Interview, Male *Ghawarneh* peasant farmer, *Mashare'*, 14 May, 2001). Although they suffered from episodes of scarcity, their experience with water was visual because it was surface water, allowing them to fully experience abundance and engrave it in their memories. But ones access to water depended on more than just the generosity of 'God'. Although no one could remember how shares of *wadis* water were set up or agreed upon, all those who could remember said that everyone knew when their turn for water started and when it ended.

Three main *wadis* ran across the research area: *Wadi Ziglab* in *Sheikh Hussein*, *Wadi Jurom* in *Al-Mashare'*, and *Wadi Al-Yabis* in *Wadi Arrayyan*[7]. Water was distributed according to the size of landholding. Considering that not all land was cultivated, it is not clear whether cultivated land dictated the water share or the water share dictated how much land can be cultivated. Some farmers recall that the distribution of water resources was decided by the *Emir* of *Ghzawi*, *Mohammed Al-Saleh*; 'he decided who got water, when and for how long. Two or three hours for each farmer... he was the only one who planted bananas; we could only plant wheat and corn' (Interview, Male *muzara'a* practicing Palestinian farmer, 8 May, 2001). Water from *Wadi Ziglab* was divided into four main canals: one to *Emir Mohammed Al-Saleh* in *Tel Al-Arba'ein and Al-Hamra* (50% of the water), one to *Naser Al-Shamekh Ghzawi* in *Glei'at* (25% of the water), one to *Hamza Ya'goub Ghzawi* in *Buseileh* (15% of the water) and last to an area called *Harrawiyyeh* (10% of the water) (Interview, oldest living son of *Emir Mohammed Al-Saleh*, 15 June, 2001). Thus, three of the four canals were allocated under the *Ghzawis* control, while the fourth in *Harrawiyyeh* was distributed to various smallholdings that

[7] See Map IV.1, p.97

peasants cleared and cultivated for their survival. There were other landholders within each main canal and the *Ghzawi* chief subdivided those main canals to smaller landholders and sharecroppers practicing *muzara'a* in their land. In *Al-Mashare'*, water was distributed in a similar manner: The water of *Wadi Jurom* was distributed into three main canals: one to the *Ghzawis*, one to the *Kafarneh*, and one to the *Rayahneh*. The management and conflict resolution of the water distribution in both *wadis* was the responsibility of the *Emir Mohammed Al-Saleh* (ibid).

Because all the residents of *Wadi Arrayyan* are either from *Zainati* tribe who acquired property in the valley in 1946 or from the refugee *Turkman* tribe who acquired land from the *Zainatis* through the UNRWA deal in 1950, none of them have any knowledge of agricultural practice and water distribution in the area prior to their arrival. The water of *Wadi Yabis* was divided into three main canals, central, northern and southern. According to a male *Turkman* farmer in the area (Interview, *Wadi Arrayyan*, 7 May, 2001), the control of the water distribution was in the hand of the *Zainatis'* chief, *Faisal Zainati*, because they were on the head of the *wadi* and because of their precedence in the area, 'some would get water, some would not... *Zainatis* would get 2-3 days a week; others would get one day, and some only few hours' (ibid). The *Turkman* clans collectively owned agricultural land, under the *musha'* system. They elected a chief from within them to arrange the distribution of their share in the *Yabis* water following their land shares. Farmers agree that the water they received, then, was enough to quench the thirst of their lands. They did not recall significant conflicts within them over water shares, but some expressed some tension with the *Zainatis* and resentment towards their 'unfair' distribution of resources. Some farmers recall that they had to wait more than a month for their water turn (Male *Turkman* farmer, 3 July, 2001). One of the *Zainatis* owned so much land he had water for almost three weeks. Even within the *Zainatis*, some felt that their chief was getting more than his fair share of irrigation water. The nephew of *Faisal Zainati* recalls that in the 1940s, his father who owned 1000d in the area used to steal water from his brother, the chief, and used to cover the irrigated soil with dry soil in order to hide the fact that they took more water than allocated for them. He recalls that sticks and shovels were used in fights over water turns and sometimes firearms. When problems could not be solved within the tribe, they used to resort to the local government in urban centres (Interview, Male *Zainati* farmer, 2 June, 2001).

Major water turns were divided into what was called *'fasil'* which means either full day or full night. So nightfall or day dawn used to be the marker of the start or end of ones turn. Indeed, many small landholders or sharecroppers received turns, which were shorter than one *fasil*, and they say that somehow they knew when their turn was. As in the case of irrigation systems in the entire Jordan Valley described in Chapter four water turns followed the layout of agricultural land; each land would deliver water to the neighbouring land through the canals which the peasants and *harrathein* built; 'Each person delivered the *fasil* to the following farmer... without state employees like today, without administration' (Interview, one of the *Emir*'s sons, 8 April, 2001). They used to dig the water canals

twice a year: once in the beginning of the winter season, October or November, and once in the beginning of the summer season in May. They all contributed to the maintenance and clearing of the canals.

Almost all those who practiced agriculture before the construction of EGC project, remember that from time to time conflict over water turns used to arise. Sometimes some *harrathein* or *muzara'a* sharecroppers used to open the canals to the lands of their landlords during the night. Stealing of water turns was not unheard of at the time, but it was easily discovered because the diversion of the water would cut it off entirely from the land entitled to water at the time. Those who could afford it used to assign watchmen over their water turn. Although the *Emir* was a stakeholder within the irrigation system, he litigated conflicts over water thefts and turns even those which his own *harrathein* were involved in. When such conflicts rose, the adversaries would go to the *madafa* – guesthouse – of the *Emir* litigate the case. In most cases, the adversaries would accept the ruling of the *Emir*, which was perceived more valid than that of the state: 'State ruling, he is the ruler, he is the *wali*' (Interview, male peasant of slave ancestry, *Sheikh Hussein*, 25 April, 2001). In the seldom cases when one of the adversaries was not satisfied by the ruling, they used to go to state courts in nearby urban centres, such as *'Ajloun*. Although conflict over water sometimes became violent and turned into armed fights, they were easily resolved by the *Emir*'s verdict. One of the farmers who witnessed those days said when asked about how those fights would end, '... well, nothing, we'd kiss each others foreheads' (Interview, male *Ghawarneh* peasant, *Mashare'*, 14 May, 2001). One should not under-estimate such conflict because of how easy it was resolved. The easy resolution of conflict is attributed to tribal customs and values rather than to the lightness of the water issue. All conflicts, including those in which people were killed, were resolved under tribal customs through what is called *jaha*, which means appealing to high ranking 'faces' in the tribe to resolve the conflict. The *Emir* of *Ghzawi* used to be that face.

The authority of the *Emir* of *Ghzawi* was not only attributed to his power or the size of his landholding. To the peasants of NJV, he possessed a fairly acceptable level of integrity, which made them accept his authority. The authority of the *Emir* was also because of his good connections with the Ottoman administration in *'Ajloun* and later the Jordanian administration. The *Emir* was the peasants' connection to the administration. And he conducted any needed administrative business within the region. His influence on local administration was quite strong: 'One word from *Mohammed Al-Saleh* was enough to put anyone in jail' (Interview, a male peasant of slave ancestry, *Sheikh Hussein*, 4 June, 2001). He used to bribe the employees of the state administration to get his business done, which was paid in kind. He would give a state clerk a piece of land in NJV in return for his services, which is another way some urban dwellers came to own land in the region. It can be argued that the whole concept of the *Amarah* – Emirate – elevated the *Ghzawis* to an unquestionable aristocratic level, which symbolically subordinated all the other dwellers of the valley to them. This *Amarah* was

never connected to the royal family, but has been attributed to the *Ghzawi* chiefs because of their administration of the *Haj* troupe during the Ottoman rule. Contrary to royal status in the *Hashemite* family, the *Emir* title was not heritable to all his children. It was passed to the following chief of the tribe, which he would choose to follow him, and was officially halted by the death of *Mohammed Al-Saleh* (b.1885 – d.1965). However, the name of the *Amarah* continues to be attributed to the *Ghzawis* (Interview, son of *Emir* of *Ghzawi*, 15 June, 2001).

The *Emir*'s patronage of peasants was not always seen through weak vs. powerful perspective, but through the acceptable norms of tribal hierarchies, which were integral to the Jordanian society at the time. Thus, this complex combination of power, historically derived social status, and customarily acceptable authority played a major role in the mediation of agricultural practice and water distribution in NJV. This explains why it is the overt violent conflict over water that is stronger in the distant memory of the valley's dwellers than the covert conflict over the distribution of water turns. Day-to-day conflict over access to water concealed a latent conflict over water allocation, due to the influence of *Emir* over the distribution of water resources. This does not negate that many peasants were aware of the possibility of unfairness in the water allocation, not only by the judgement of the *Emir* but by the large landholders who decided water allocated to *Muzara'a* sharecroppers and their own lands cropped by their *Harrathein.* Although not as resourceful, some farmers preferred to plant on rainfed land further towards the mountains. One farmer recalled a proverb, which says *'Al-Ard al-Shamsiyyeh wil-lirjal al-mansiyyeh'* – 'The land of the sun and the forgotten men' (Male elder peasant of slave ancestry, *Sheikh Hussein*, 11 July, 2001). By this, he meant that rainfed land is under-estimated like forgotten men or forces. By cultivating rainfed land, farmers were under the mercy of God only. Only the power of God surmounted that of the *Ghzawis* and large landholders. The belief in God's mercy, in which the peasants placed their destiny and the fate of their crop, was their only source of independence in a setting largely relying on hierarchical social relations and overwhelming power structures.

It can be argued that prior to the construction of the canal it was nomadic tribes who enjoyed the most independence between those who dwelled in NJV. *As-Saqer* was the dominant nomadic tribe, which wandered the west and east banks of NJV, among various small nomadic clans wandering the valley. As mentioned in Chapter four, historically, nomads were considered to have a dominant position over settled tribes because of their mobility and hardiness (Hourani, 1991). Nomadic lifestyle provided *As-Saqer* with the flexibility of searching for pastor and water in an unenclosed environment. Running water streams were available along the sides of the valley, and there were enough pastors for their cattle in their own territory and in other undeveloped land in the Valley. Despite the harshness of the nomadic lifestyle, it set *As-Saqer* tribe above interdependent power and social relations within NJV. They depended on the resourcefulness of the wilderness, 'The spacious land of God', through which they could wander searching for pastor and water, believing in God's

divine ability to grant them his blessings of resources. However, *As-Saqer* still needed cereals and vegetable produced by those who tilled the land does not negate the fact that as nomads, despite the fact that they had sufficient dairy products (Hourani, 1991). They had long stopped raiding other tribes and developed exchange relations with settled clans within the Valley, with which they shared land and water resources.

V.5 Religion as a venue of hope and equality – *A subliminal value system within a rhetoric and practice of inequality*

Although contemporary literature on the role of religion in the order of nature tend to give Islam a central role in mediating the human-nature relation (e.g. Nasr, 1996), the anthropocentric values, which Islam set in regard of humans relation with their surrounding nature did not dominate the NJV dwellers conscious in their daily interaction with their living environment. Despite the presence of many examples in the Islamic text of the human's patronage and superiority over nature[8], peasants and nomads of NJV practiced a more harmonious relation with their environment, as demonstrated in the above discussion. As discussed in Chapter four, Islam is a religion of regulation and legislation, many of which are intertwined with customary tribal practices such as access to land and water. However, two values seem to have penetrated the socio-economic and political relations within NJV, which are derived from Islamic discourse and which are dominantly used in the daily rhetoric of the Valleys dwellers: equality in Islam and belief in God's mercy as the mightiest power. Every farmer in NJV ultimately put his and his crop's fate in the hands of God. Rain is a mercy from God, and draught is a punishment of evil actions; 'The soil that is good produces (rich) crops by the will of its Lord, and that which is bad yields only what is poor' (Al-Qurā n, 7:58). Everything that any person owns or acquires belongs ultimately to God and consequently, as it was acquired, it could also be lost. This belief not only governed how people perceived the availability of environmental resources, but also all kinds of material riches. In this sense, the power of God could strip the affluent from their riches, making them all equally subject to loss and winning in the face of God.

Equality of race is an important value instilled in the people by Islam. As suggested in Chapter four, Islam played an equalising role within the entire Jordan Valley. Although it was not formally institutionalised within the region, Islam prevailed in its embeddedness within local cultural practices and day-to-day rhetoric. All Muslims are considered equal in front of God; the only thing that puts a Muslim above the other is his faith and conformity to the teachings of Islam. Thus, embracing Islam and adherence to its rules provided a shared value system through which all residents of NJV felt equalised within a setting of unequal power relations symbolically expressed through the rhetoric of 'origin' – *Slave*, *Ghawarneh*, *Amarah*, etc. – and practiced in everyday social and material relations. The role of Islam as an underlying equitable value system should not be over-rated, as in reality the presence of social hierarchy seems stronger than that of 'brotherhood' in Islam.

[8] Chapter Two; section II.1

Merrill (1881) commented on the relation between the *Ghzawis* and the peasants, '[a]t the *Yabis* we fell in with the *Ghazawiyeh* Arabs, different entirely from the *Ghawarneh*. [...] The *Ghazawiyeh* and the *Ghawarneh* do not inter-marry' (p.186). The fieldwork revealed that even *Ghawarneh* peasants refused to inter-marry with the peasants of slave ancestry. Most peasants used to call the *Ghzawi* chiefs *'Ammi*, a word, which literally means paternal uncle in Arabic, but used by the slaves to call their masters. Most of the people of the NJV used to refer to the *Ghzawis* as *Al-Ahrar*, a free person in Arabic, which set them not only above peasants of slave ancestry but above all other residents of the valley. Even in agricultural practice, titles embedded the hierarchy within it: the word *fallah* was used to refer to farmers, who worked in land that they did not own, while *muzare'* was used to refer to landowners (Abu Sha'ar, 1992); both words mean farmer in Arabic. The terms *Harrath* and *murabe'* were used to set wage labour and those who worked under *muraba'a* contract below the *fallah*, who practiced sharecropping under *muzara'a* contract.

Although Islam provided a shared value system, which created a sense of equality through conformity, some of its values reinforced inequality and others could be manipulated to achieve subordination. For example, Islam did not abolish slavery, but rather discouraged it. In the beginning of Islam, slavery was the main business of the merchants of Arabia: abolishing it would have caused resistance or even renunciation of the new religion (Mernissi, 1993). Islam set the obligation to 'obey God and the Prophet and those in authority among you' (Al-Qurā n, 4:59). The highest authority was given to the ruler, followed by fathers over children and husbands over wives. Although it is argued by Muslim scholars that women in Islam were granted equal rights, it still set them in an inferior position to men. Some of the examples illustrating this argument are: the fact that a woman inherits half the share of her brother in her father's inheritance and the testimony of a woman is worth half the testimony of a man in legal courts; 'That is because of her inferior intelligence' (Saying of Mohammad, cited in Robinson, 1991, p.41). Despite its reinforcing some of inequality values between men and women, Islam tried to eliminate many of the extreme customary practices against women, such as the exclusion of women for their rightful inheritance. But women were expected to marry their paternal cousins in order to maintain the family property. In most cases, women used to give up their inheritance to their brothers, even without getting paid for their share. Women who demanded their lawful share in their inheritance used to be considered shameful and in many cases were renounced by their families (Interview, male peasant of slave ancestry, *Sheikh Hussein*, 5 May, 2001).

V.6 The *'madafa'*: A forum for 'collective action'? – *Spaces of authority, symbolic equality and social exclusion*

The guesthouse, *madafa*, in the Bedouin and rural Jordanian culture, was and still is an essential part of every dwelling. It is a separate space within a dwelling that has a separate entrance through which a

guest enters without going through the private section of the dwelling. Even when Bedouins lived in tents, they still allocated part of the dwelling for the *madafa*, separated by a curtain made of the same tent's fabric from the tent's private section. The main use of the *madafa* is for the male members of the house, mostly the head of the house, to receive their male guests. The *madafa* would also be connected through another door or entrance to the private part of the dwelling, through which the head of house would have contact with the female members of the family, who would be passing refreshments and meals for his guests. After working days, males tend to visit each other in the evening where they would relax over a glass of tea. In most cases, those visits are group meetings, which usually take place in the *madafa* of the local chief. Each clan also carried out meetings in the *madafa* of its own chiefs, where they mostly discussed their problems and exchanged advice on various social and material issues. The *madafa* as a space for male social interaction is a forum for the exchange of practical knowledge, local news and ideas for dealing with collective problems. Farmers offer each other advice on how to deal with agricultural problems; state-regulations were usually disseminated within those fora; and collective approaches to dealing with externally-induced problems are discussed and agreed upon in those informal daily visits.

The role of the *madafa* was quite significant in the past. Of all *madafas* within NJV, that of the *Emir* of the *Ghzawi* was the most important (Several interviews with males in the research area, May – August, 2001). Hospitality to strangers is an important part of tribal culture, not only as an expression of generosity, which is a characteristic to the tribal society, but also an expression of power. The *madafa* of the local chief used to be community's hospitality house, which offered passing strangers food and lodge for three days according to tribal customs. 'Hospitality was as much a reflection of power as it was an extension of individual's honor' (Rogan, 2000, p.40). Rejection of the local chief hospitality was considered an insult. The *Ghzawis* hospitality was one expression of their power and influence in the NJV. The importance of the *Ghzawi*'s *madafa*, then lied in its role as the local forum of debate and conflict resolution under the leadership of the *Emir*. The NJV's people went to the *Emir*'s *madafa* to resolve their internal conflicts, including those over distribution of water resources (Several interviews with males in the research area, May – August, 2001). The *Emir* played the role of the litigator and the judge. In some cases, he might consult with other elders or chiefs of clans present in his *madafa*. However, he would have the last word regarding those conflicts (ibid).

Until his death in 1964, the *madafa* of *Mohammed Al-Saleh Ghzawi* was open all the time for all residents of NJV. They would meet daily with him, whether there were issues that need resolution or not. The informality of the *madafa* offered the space to bring up sensitive issues for re-negotiation such as extra shares of water resources. This used to be an opportunity for the *Emir* to express his generosity by accepting to extend some one's or some clans share of water, mostly temporarily, to reinforce his authority and respect in the area. The *Emir*'s *madafa* was a place for daily interaction and discussion, collective problems were discussed and in most cases they used to reach a consensus on

how to deal with them assigning the different responsibilities to those seen appropriate. The *madafa* was open to all males of the NJV; no one was turned back, whether stranger, a *Ghawarneh* peasant or a peasant of slave ancestry (Interviews with peasants of various origins, May – August, 2001). This gave all those who attended the *madafa* a feeling of inclusion and equality within the community despite the inherent hierarchy of the relation. Attending the *madafa* was considered an expression of alliance and solidarity, and non-attendance was considered a form of defiance to the authority of the *Emir*. As much as the *madafa* was an expression of solidarity and inclusion, it was an expression of woman's inferiority and her exclusion from the only available mechanism for collective decision-making within the society. Women's exclusion from decision-making in the general manner was based upon customary and religious practices, which prohibited women from mixing with non-relative males, while their exclusion from decision-making regarding agricultural practice and irrigation issues was based on the perception of women's role in agricultural practice as limited to taking care of the flock and harvesting the crop.

V.7 Conclusion: Access to and control of water resources in the context of social process in the NJV

This chapter has demonstrated that prior to EGC project, the distribution of water resources expressed, reinforced and embedded all the 'moments' of social process; including historically and religiously derived values, social and power hierarchies in both rhetoric and practice. The symbolic power of the *Emir* of *Ghzawis* was reinforced by his access to large landholdings and the consequent labour relations. Prevailing social relations and hierarchies, based on origins and gender, have also reinforced those power relations and were reflected in the labour relations in agricultural practice. Language and rhetoric institutionalised those hierarchies where variations of words such as 'farmer' reflected the social and material position, and sometimes the origin of the farmer. Those hierarchies were concealed, or made latent, through the shared system of belief in Islam, despite the inherent inequalities within some of its values. The *madafa* of the *Emir*, an expression of alliance and exclusion, represented a forum for collective consciousness to emerge, but also reinstated the power of the *Emir* as a litigator who had the final word on issues related to agricultural practice and access to water resources.

As much as those dynamics could be manipulated by the powerful for their own advantages, their mechanisms were somewhat accessible to all the valley's male dwellers, making it possible for them to negotiate their conditions and sometimes change them. The men and women of the valley acquired enough knowledge of their surrounding nature and their own abilities, which, together with their belief in God as the ultimate power, allowed them to pursue alternative agricultural practices, granting them a level of independence within a context of highly interdependent and hierarchical social process. The power and social hierarchies of this period played a major role in the shaping of the outcomes of the EGC project and access to land under its law. The following chapters will

demonstrate, that although EGC project drastically changed agricultural practices, labour relations and many values in relation to water and material practices in general, it was not reflected to the same extent in prevailing power and social relations. Chapters six and seven also reveal how over the following decades new institutions, such as state authorities and cooperative institutions, became new spaces for the traditional powerful to exercise their power and exclude the 'other', such as wage labour, Palestinian refugees and women. While the *madafa* lost its role as a space to discuss the management of water resources, it remained a forum that expresses alliance and power. Chapters seven and eight also will demonstrate that, although over the following decades the project brought changes to many values in relation to material practices and the valuation of water, many social values regarding gender and social hierarchies persist in latent and overt forms.

CHAPTER SIX

THE CONSTRUCTION OF EAST GHOR CANAL

Disruptive change and the dynamics of social process

Introduction

In 1958, the construction of the East *Ghor* Canal (EGC) commenced during a controversial national and regional political era. The implementation of EGC was a double-edged weapon for the Jordanian establishment. On one hand, the project offered an opportunity for development as - defined by the post-independence development rhetoric of the 1950s – a source of income and foreign aid, which could enhance the young king's popularity within his own country. On the other hand, the implementation of the project outside the collective Arab consensus could be misinterpreted at the national and regional level as acting against Arab rights in the basin and an act of treason, as it implied a concealed recognition of Israel and the settlement of Palestinian refugees in Jordan. In order to minimise the possible negative reactions to the project and emphasise its gratifying significance to the Jordanian population, the project's design, progress and inauguration was accompanied by a media campaign, which contributed to the construction of EGC as a Jordanian epic of innovation, conquer and 'real socialism'.

While the EGC project was constructed in the Jordanian media as a national achievement, its implementation in the Jordan Valley was given a different reality through the dynamics of the area's social process. The re-distribution of land within the project was dictated by the prevailing hierarchical social and power relations in the Valley and influenced by the different material practices and values of the different social groups, which minimised the 'equalising' effect that the project claimed to deliver. As much as the project was shaped by the dynamics of socio-environmental conflict within the area, it contributed to shaping them. The project placed the state at the centre of the farmers' relation with their land and water resources. The 'abundance' of irrigation water, which the project initially portrayed to the farmers changed their perception of water and its value and resulted with significant changes in their agricultural practices. This chapter starts by introducing the rhetoric through which the project was portrayed at the national level using information collected from newspapers archives and moves on to unveil its realities at the local level based on the accounts of the local population and those who worked on the project as employees and officials of EGC Authority (EGCA). The discussion employs the 'moments' of social process to reveal how the project was *being shaped* by and contributed to the *shaping* of the dynamics of socio-environmental conflict within the valley.

VI.1 The social construction of East *Ghor* Canal Project – *A Jordanian epic of innovation, conquer and 'real socialism'*

As mentioned in Chapter Four, the main reason behind the American funding of EGC was ensuring political stability through economic development. The job opportunities, which the project was supposed to open and the expansion of agricultural practices were considered the best means to ensure the resolution of the refugees' question. For the Jordanian establishment, the project represented a major source of large foreign aid that would trigger economic development, to reinforce citizens' loyalty. This was coupled with the need to settle shifting Bedouin tribes to establish them as the backbone for the monarchy. However, the study of newspapers archives revealed that neither the Palestinian refugees' question nor the need for the royal family to establish loyalty were mentioned publicly during the times leading up to the construction of the EGC and the subsequent abolishment of prevailing land and water rights in the Jordan Valley. Regional and international circumstances contributed to the construction of EGC as a Jordanian epic of innovation, conquer and 'real socialism'. The process was re-enforced by other national events and circumstances, which contributed to dramatising the importance of such project to the survival of the Jordanian people.

At the international and regional level, a three-fold setting contributed to the discourse adopted to construct a gratifying image of EGC project to the Jordanian people. Those were: the Arab – Israeli conflict over the question of Palestine and the consequent conflict over the rights to the Jordan River Basin; the locally popular Arab-Nationalist socialism of Nasser in Egypt followed by the Ba'ath socialism in Syria and Iraq; and the internationally prevailing and eye-dazzling development discourse and practice in post-colonial and post-independence nations. Although started since 1955, the plans to construct EGC were only brought up in the Jordanian media five months prior to the actual commencement of its construction – March, 1958. At the time, the project was introduced as an irrigation project justified by prevailing economic grounds, without any intentions for land reform.

The project was hailed in the newspapers and Op-Ed's as a major income-generating project at both the national and local level. The intensification of 'high value' agriculture, which the project would trigger, was perceived to be the best means to achieve self-sufficiency – the buzz word of the 1950s – as well as to improve Jordan's GDP through increasing its agricultural exports. The construction of the canal was supposed to create 1000 – 3000 job opportunities in construction labour, agricultural practice and in bureaucratic jobs in EGCA. Arguments for the project were backed by various statistics and figures, which appealed to the Jordanians yearn for a sense of security in a period characterised by political instability, war and dire economic need, such as: the project estimated annual return was JD2.5 million –one third of Jordan's GNP or only 10% of Jordan's land is so far utilised (*Al-Difa'*, 6 March, 1958, p.4).

While the project was under construction, more articles appeared in the media glorifying the project and its expected achievements. At the time, Jordan was facing internal opposition by various political parties allying with and funded by neighbouring political regimes: the Syrian Ba'athist regime and the Arab Nationalist socialism of Nasser, challenging its integrity and continuity. For sympathizers with Arab Nationalism and the Syrian regime the project represented an aggression against Syria's rights to the *Yarmouk* River waters and a betrayal to unified Arab action. The government controlled media persisted in its popularisation campaign of the project to emphasise that Jordan would not be taking beyond its Arab agreed share of the basin's water and that the project was a partial fulfilment of the larger unified Great *Yarmouk* River Development scheme previously agreed upon by the Arab states. This information was published in every news clip, which appeared during the construction of EGC (*Al-Difa'*, Mar – Nov, 1958). So in addition to scientific rhetoric adopted to construct the project as an economic necessity, the media employed legalistic style to emphasise that the project was legally justified, by backing it with previous Arab agreements terms and conditions.

According to historicists of EGC project, land reform was not initially considered by the Jordanian government, as it set out to construct the canal as fast as possible without a specific scheme for the irrigation networks. The US engineers expressed concern over the fact that the canal was being constructed without plans for the distribution system (Rook, 1996) and insisted that in order for the project to succeed there was a need to readjust 'almost all existing land ownership to an efficient operating irrigating system' (ibid, p.223). Although such decision was expected to unsettle the mutually supportive relation that the establishment enjoyed with the large landholders, it presented the government with an opportunity to further popularise the project and the monarchy. The 'socialist' form of Arab Nationalism, which the charismatic Egyptian leader Nasser was advocating and practicing, contributed to the actual and symbolic threat he presented to the Jordanian monarchy during the 1950s. Thus, the passing of land reform law in 1959 for the re-adjustment and re-distribution of agricultural land was employed to contribute to constructing an image of the project as an expression of the government's practice of 'real socialism'.

From that point onward, the media used the rhetoric of rectitude, which appealed to values of 'equality' as it continued to follow the project's progress. Op – Ed's emphasised how land reform demonstrated a commitment to 'humanitarian needs, equal opportunities and the abolishment of existing social discrepancies' (*Al-Difa'*, 26 Feb, 1959). This rhetoric was culminated on the day of EGC inauguration as King Hussein opened the gates of EGC and its sub-canals and handed land titles to the first group of farmers, allocated plots in the project. In order to have a nation wide influence, the widespread government controlled newspaper, *Al-Difa'*, published on its first page a large picture of King Hussein handing a title deed to one of the Jordan Valley's farmers (*Al-Difa'*, 10 Oct, 1961). The event contributed to the construction of the canal as a socially justifiable project and

to the construction of King Hussein's image as the patron of the poor farmers, in order to increase his popularity as a leader and enhance the Jordanians' loyalty to the establishment.

The competition, which the young Jordanian king faced by Nasser's popularity within Jordan was not only caused by Nasser's 'socialist' form of Arab Nationalism, but also by his strong position against the Israeli presence in the region. As Israel revived its plans to divert the waters of Jordan River outside its catchment area through the National Water Carrier in mid 1959, EGC was transformed into a symbol of struggle against the Israeli aggression: an assertion of Jordan's right over the Jordan River water. The quantity of water, which Jordan was to divert from the basin fell within its share in the Joint Development Project proposed by Johnston in 1953. However, the media did not miss an opportunity to portray the project as victorious deed by the king. The president of the EGCA compared King Hussein to *Khaled Bin Al-Walid*, a Moslem conqueror, in his speech on the project's inauguration day. In Arabic, the word *fateh* – opening – means military conquer as well as inauguration depending on the context. The president of the EGCA said 'as our hero *Khaled Bin Al-Walid* conquered the region when he defeated the Romans in the Battle of *Yarmouk*, our King today is a hero as he inaugurates this great economic achievement' (*Al-Difa'*, 16 Oct, 1961). The golden age of Arab conquers and scientific achievement in the region is a source of pride for the Jordanians. They tend to borrow from this history to enhance the leadership traits of their current rulers and refer to their past civilisation as a source of inspiration.

Although the Arab – Israeli conflict and the challenging Socialist Arab Nationalism contributed to the rhetoric which portrayed EGC as a project with patriotic, social and moral objectives, it was all embedded within the prevailing discourse of development practice of the time. The EGC project was, first and foremost, Jordan's first major development project: an icon of modernisation. It was the product of the visualisation of the World Bank and the US government in which Jordan would experience an 'agricultural renaissance' and eventually emerge as a 'developed' nation – as opposed to 'backward' – and become independent of foreign aid (*Al-Difa'*, 11 – 15 Jan, 1959). In the late 1950s, Jordanian engineers and experts were quite enthusiastic about EGC project as the launching of Jordan's journey into development and modernisation (Interview, current high official in JVA, engineer during EGC construction, 8 August, 2001).

The US and the World Bank experts played a major role in the propagation of development discourse in the Jordanian official arena. Studies and reports carried out by the World Bank experts focused on the use of conventional economic figures such as GDP and GNP to define and assess development. While the World Bank played a major role at spreading the development discourse of the 1950s in Jordan, the United States Information Agency (USIA) popularised large irrigation schemes in the region during Johnston mission in the early 1950s. In order to convince the region of the advantages of the Jordan Valley project, USIA used a 'carefully-conceived educational campaign'

[...] 'Voice of America Arabic and Hebrew broadcasts extolled the development possibilities for the Jordan Valley; USIA produced a series of pamphlets in English, Arabic and Hebrew containing scripts of the broadcasts; movies "showing large hydroelectric and irrigation projects in the US were sent to the area for exhibit to government leaders, agriculturalists and engineers' (Rook, 1996, p.214).

Western ideals and definitions of development reached Jordan long before Johnston mission, as it spread towards the East during the British Colonisation. Since the 1930s, newspaper articles already started adopting the modern development terminology and ideology. The lack of capital in rural life and Bedouin lifestyle were linked to extreme poverty, especially after the monetarisation of exchange. In 1937, an article published in *Palestine* newspaper criticised Bedouin lifestyle in *Transjordan* as non – productive and called for a process of intensification of agriculture to bring *Transjordan* into the new age of capital: 'it's time to teach the Bedouins to fold their tents for good' (*Palestine*, 27 February, 1937, p.3). Such rhetoric became widely adopted by Jordanian experts over the following two decades, driven by World Bank rhetoric and post-independence 'development' processes in neighbouring countries: large irrigation projects and agriculture intensification, as did Nasser in Egypt. Experts who studied in the US were quite taken by the American experience of the reclamation of the desert and turning it into fertile land (Interview, US educated *Ghzawi* in the 1950s, 8 April, 2001).

By the mid 1940s, many newspaper articles were published by agricultural experts calling for the adoption of new technologies in agriculture in order to be able to follow up with other nations who managed to develop through agricultural intensification. They criticised farmers' lack of knowledge about new and efficient agricultural practices in a language which was concealed by a concern over the farmers' plight and living circumstances. Experts used the rhetoric of calamity in discussing the status of agriculture in Jordan and its influence on nation building, appealing at the same time to sentiments of morality by using rhetoric of rectitude to refer to the farmers' circumstances: 'This source of wealth is living in isolation from the *civilised* world, which already embraced modern means of life; he [the farmer] is living a *primitive* life, alone, with no one to support his *naïve* nature... with no source of advice or guidance except his *weak soul*, which does not have the capacity to allow him to think, create or learn. He inherited from his ancestors the traditional way of practice, which we are discarding today, as it is no longer deemed appropriate for our age' (*Al-Jazeerah*, 4 June, 1945, p.4, italics added).

The construction of EGC in 1958 was a welcome realisation of modernisation dreams brought by the fascination with Western ideals, which started in the 1930s and slowly took over the Jordanians' aspirations the following two decades. Those who witnessed the progress of the project were overwhelmed by its sheer enormity and by the technologies employed to implement it. It was an age of idolisation of the machine and its power. The amount of human energy and mechanical power was

portrayed as a reflection of the nation's power to take control of its destiny. Journalists reported from the field on the collective power to 'build this country and serve this nation' – King Hussein's slogan, by which he inspired the Jordanian people for decades to come. The marriage of the human power and machine power was employed to portray the process as a symbolic as well as material conquer. The symbolic conquer was derived, as mentioned above, from the constructing the project as a victory over the Israeli enemy across the river: 'The sound of the machinery, magnified by the workers singing patriotic songs against the enemy, calling for the long life of the King – the protector of our land, is challenging the Jewish soldiers standing just 20m away from the site' (*Risalat Al-Urdun*, May, 1961, pp.5 - 9). On the other hand, the project was considered conquer over the unpredictability of nature. Jordan suffered sever draughts in 1947, 1958 and 1959 and was forced to import wheat from Iraq and the US to make up for its food deficit. Thus, the project was cheered because the farmers of the Jordan Valley would no longer suffer from episodes of draught. The project area was to continuously receive irrigation water, by the diversion of 155 million m^3 from the Yarmouk River into the Valley. The project was portrayed as a co-operation between Heaven and Earth to get Jordan out of draught crisis. When the project was inaugurated, the Valley's people and journalists witnessed the gushing of the water from the *Yarmouk* River into the canal. The action amplified the image of the project as a continuous source of irrigation water.

Although the visualisation of the EGC project was primarily embedded within the discourse of development, the rhetoric of technological advancement and economic logic was only one facet of the constructed definition of the project. Rhetoric of entitlement over Jordan River Basin waters was used to reinforce the importance of the project and to enhance the monarchy's position within the country, while the rhetoric of rectitude gave the project a socialist image, which also contributed to the monarchy's stand against challenges to its legitimacy. The plight, of Jordanian farmers - as constructed by the development discourse – and the recurrent draughts fresh in the Jordanian's memories, contributed to the dramatisation of the need for large irrigation projects in face of unpredictable availability of water. Religious discourse was not prominent in the construction of EGC project's definition. As discussed in Chapter Five, Islam was not formally institutionalised in the Jordan Valley, but was embedded within local culture and daily-life practices. Although reference to God was made when it rained after a long period of draught, such as 'rain as a heavenly reward', but this was specifically linked to the need for mankind to take control over nature to maximise on its riches and minimise the adversity of its predicaments.

VI.2 Access to land under EGC Authority – *Land reform between legal rhetoric and politics of practice*

EGC project came across in the newspapers of the time as benefiting all the Valley's small farmers and peasants on the account of large landowners and tribal chiefs within the area. The implementation of the project, however, was more complex. Access to land distributed by EGCA was governed by dynamics, which extended beyond its official mandate as a formal institution. The

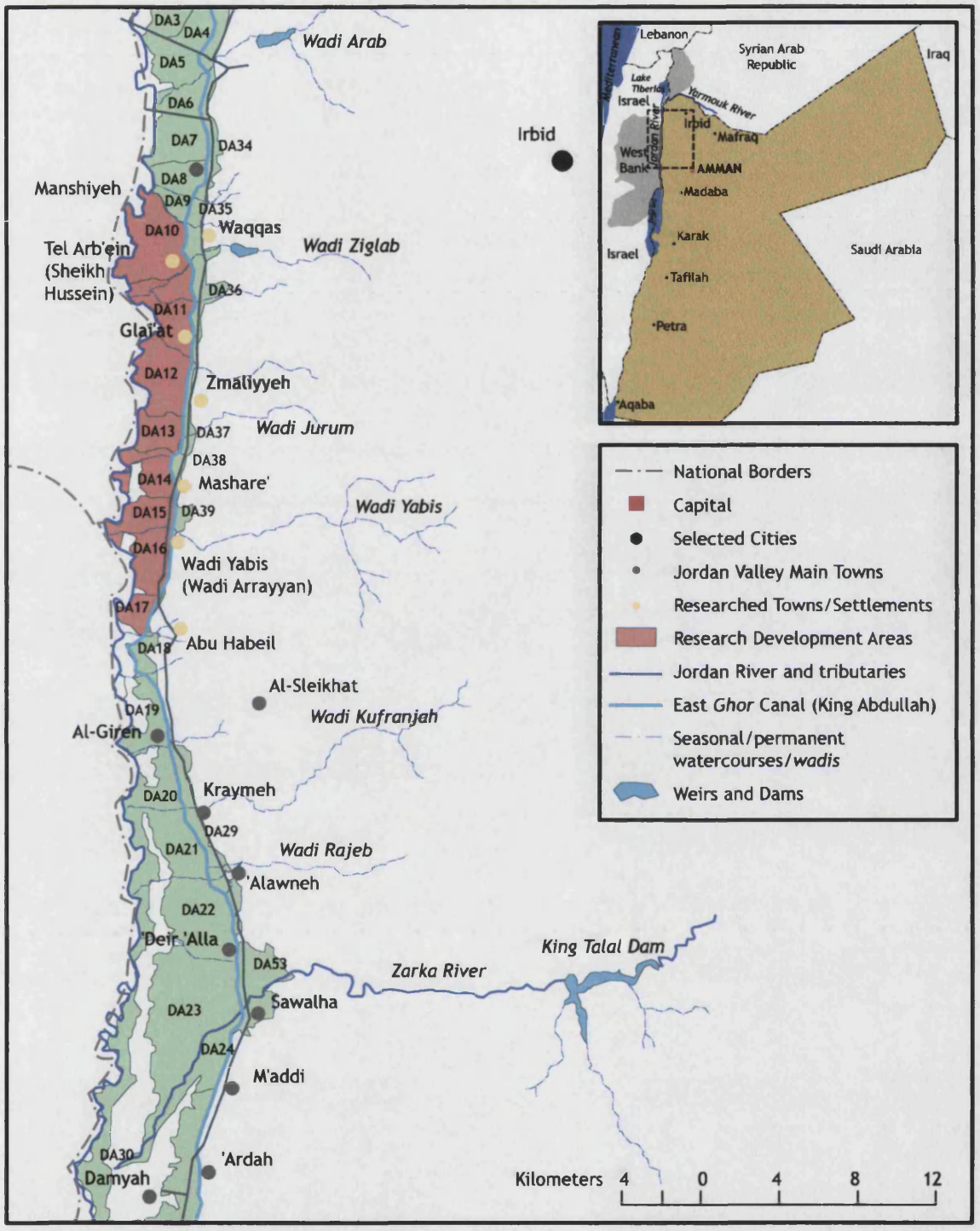
EGCA law of 1959 was the official reference for deciding how the project lands were distributed. However, the process, through which land was distributed, and the novelty of the government/citizen relation left the process open to manipulation: Who got access to land plots in the project, its quality and its area was determined by the prevailing power and social relations in the valley.

According to the first EGC law, passed in 1959, all the agricultural land that fell within the project's boundary was confiscated for re-distribution following the new irrigation networks. Landowners were compensated for the value of their land and water rights and were given priority to buy land of their choice within the project area. As mentioned in Chapter Four[1], the 70km canal was built in two consecutive stages during the period between 1958 and 1963. The first stage extended *Adassiyyah* in the North to *Manshiyyeh* north of the research area (DA1 – DA9). The research area (DA10 – DA17) was included in the second stage (DA10 – DA25), which extended from *Wadi Ziglab* North of *Sheikh Hussein* to the south of *Zarka River* in the central Valley (Map VI.2, p.161). The land confiscation and re-distribution followed the canal construction progress. In fact, land reform was initially lagging behind the canal. Thus, while the process was being gradually implemented in the first stage area, the large landowners within the first and second stage were carrying out a process of lobbying, negotiation and manipulation to minimise the possible damage, they believed they would suffer from the project's implementation (Interview, sons of *Emir Ghzawi*, April – June, 2001).

The chiefs of the *Ghzawi* tribe were the largest 'losers' in *Sheikh Hussein* and *Mashare'*. Their *Emir* had access to the King and the Prime Minister and tried to complain about their potential losses. The King managed to pacify their complaints by his persuasive arguments about the project's collective benefits and promises to consider their situation and try to make it up for them. One of the *Ghzawis* of *Al-Masher'* argued that there was not much that they really could do, despite their position within the area: 'Jordan was ruled by martial laws under an emergency state and people were scared. We did not have democracy like today!' (Interview, 30 May, 2001). Despite the mutually benefiting relation, which the monarchy and powerful tribes had, the establishment was more powerful than the small *Ghzawi* tribe, in comparison to the large and powerful *Bani Sakher* of the SJV. The government, nonetheless, tried to ease the worries of large landowners. At some point, the maximum allowed land holding was reconsidered and raised from 300d per person to 500d per person, which was still less than the thousands of dunums they used to own. Eventually the maximum land holding was set at 300d for the first and second stage and reduced to 200d in 1962 (Law No.31 of 1962).

[1] Section IV.6, p.126

Map VI.2: East *Ghor* Canal Project within the research area



Source: JVA (2001)

The government also allowed large landowners sufficient time, between the start of the project and the implementation of the land reform, to take suitable measures to minimise the amount of land lost due to land reform. While the land reform was carried out in the area north of *Sheikh Hussein*, the chiefs of the *Ghzawi* and the urban élite were distributing their property between their children in order to be re-allocated as much of their original land as possible. An employee of the JVA said that when large landowners complained to them about land reform, they advised them to take such

measures in order to hold on to their ownership. He argued that such measure was *not* a manipulation of the law, but a way to minimise conflict and keep large landowners pacified! (Interview, 8 August, 2001). The *Emir Mohammed Al-Saleh*, however, distributed his ownership between himself and his seven children. Those who owned more than 300d were advised by the *Emir* to take the same measure and distributed their property between their male children. None of the landowners within the valley included their female children in the distribution. They believed that it was enough for the females to inherit their share in their fathers' remaining property (Interview, son of *Emir Ghzawi*, 8 April, 2001). The urban élite, however, distributed their land between all their children including the females: some equally, others only half a share for their daughters (Interview, male Jordanian élite, 20 June, 2001).

According to the law, while previous landowners had *de facto* right to acquire land within the project; other farmers had to be pre-approved by the 'Farmers Selection Committee'. The seven committee members were selected by EGCA and included: An employee of EGCA as chair, an employee of the Ministry of Agriculture, an employee of Land and Survey department, an 'experienced' farmer from the project area and three 'experienced' farmers from the sub-governorate in which the project area is located. The term used in the statute to refer to 'experienced' farmer in Arabic was 'large', implying experienced, 'respected' and being a large landholder. The 'experienced' farmers had an advisory role in the committee. They were supposed to confirm that the applicant was actually a farmer within the area, trustworthy, and able to pay back the cost of the land to EGCA. They also acted as the intermediary between the local residents and EGCA regarding issues concerning the project and access to land. Legally and procedurally, any of the residents of the project area could directly approach the committee. However, since customarily the residents of the rural areas relied on their local chiefs in all issues concerning the government, the local committee members were naturally regarded as that mediator.

In the research area, one of the *Emir*'s brothers was selected to become a member of the committee. He and the *Emir* played a significant role in influencing the decisions of the committee and the residents understanding of their rights under the provisions of the law. The *Emir*'s brother enjoyed direct influence on the committee, which reflects today on the sentiments of the peasants of the Valley. It seems that a farmer's possibility of getting a land within the project depended on the quality of his relation with the *Ghzawi*'s chiefs and their willingness to allow that farmer a level of economic independence. As mentioned in Chapter five, peasants' relations with the *Ghzawi*'s prior to the project varied between that of complete dependence, subordinating association and attempts for independence and dissociation. In the *Ghzawi*'s eyes, the access of peasants who were closely associated with them to land did not seem as threatening to their position within the valley, as that of peasants with independence tendencies, regardless of their origins, whom they were not too keen to

see acquiring agricultural units (Interview, male peasant of slave ancestry, *Sheikh Hussein*, 4 June, 2001).

The 'experienced' farmer judgement of the applicant influenced whether or not *he* would acquire land in the project and its size, but his word was not conclusive. The committee did not always take his word against that of the applicant especially if he approached the committee directly and defended his case. One of the peasant farmers recalled his own experience with the committee when he applied for the land unit. He said that *Abdullah Al-Saleh* yelled at him in front of the chair saying, 'You! Do you really think you are responsible enough to take a piece of land? You are not getting one!' The EGCA employee asked why he believed the farmer should not get a plot and he answered, 'He is not dedicated to his work!' After a long debate, the peasant eventually got a land unit in the project. 'Since then we became enemies! Only those *Harratheen* and peasants who were obedient and courteous to the *Ghzawis* could acquire land in the project... If *Abdullah Al-Saleh* did not want you to get a piece of land, you would not even smell it' (Interview, male peasant of slave ancestry, *Sheikh Hussein*, 4 June, 2001). This perception of the peasants regarding access to land is based on experienced difficulties in the application process for land. However, no one could prove that not accessing land was because of the 'experienced' farmer role within the committee.

It was easier for those on 'good terms' with the *Ghzawis* to process their application for land. However, exclusion from access to land within the project resulted from activities of manipulation rather than direct practice of authority by the *Ghzawis*. According to Article 10.F of EGCA law No.31 of 1962, both landholders and practicing farmers on other landholders' property to apply for acquiring land within the project area according to the following priority:

1st – Landholders who were utilising their land on their own within the project area – with the help of their family members or using labour.

2nd – Landholders who were utilising their land through renting or sharecropping

3rd – Practicing farmers within the project area

4th – Practicing farmers within the same sub-governorate

5th – Practicing farmers from sub-governorates other than the one where the project is located.

The law also stated that landholders had the right to apply for land within the project regardless of the area of land they used to hold prior to the land reform. So the fact that a farmer did not own land prior to the project or owned a small piece of land was not a legal obstacle to applying for land in the project. However, based on the interviews carried out by the landless farmers in the research area, most of the Valley's residents were not aware of their rights under the provisions of the law and consequently did not apply for land within the project.

In the 1950s, most of the valley's residents got their information about the project through the word of mouth rather than reading the provisions of the law in the official gazette (Several interviews, male

farmers in the research area, May – August, 2001). As mentioned in Chapter five, the *Ghzawi Emir* and local chiefs played the role of the region's 'connection to the outside world' and most of the residents relied on them to inform them of their legal rights. Many of the farmers interviewed, said that they did not apply for land within the project because they thought they had no right to do so: many of them still believe that until this present day. Those included almost all peasants of slave ancestry who worked for the *Ghzawis*, peasants with very small landholdings – less than 10d - and a few of Palestinians who were sharecroppers in the *Ghzawis* land. Ghzawis chiefs told Palestinians, who were interested in buying land within the project, that it was only intended for the 'original citizens' of the area. The farmer did not question 'his partner's' information and still does not; 'He considered me one of his sons' (Interview, Male Palestinian 1948 refugee, sharecropper, *Sheikh Hussein*, 25 April, 2001). Another Male Palestinian refugee also said that he simply did not realise that they had such right: 'we thought the project was intended for the 'people of this land' (Sharecropper, *Sheikh Hussein*, 8 May, 2001).

The *Ghzawis* and large landholders were not only worried about the idea that those, who were 'socially below them', would become landowners. They were also worried about the possible loss of cheap labour. They did not only attempt to exclude Palestinians from accessing land in the project, but also peasants who worked for them. They led them to believe that only those who owned land prior to the project had the right to apply to buy land in the project. Almost all interviewed landless farmers from the entire research area said that they did not apply for land because committee members told them they did not have the right to do so; 'The authority only gave land to those who previously owned land even if it were one dunum only; those who did not own land, did not have right to apply for it' (Interview, Peasant farmers, *Wadi Arrayyan*, 2 June, 2001). Although many of those who did not own land prior to the project knew that small landholders could get land within the project, more than half of small landholders did not get land in the project because of misconceptions they were led to believe by large landholders.

Land reform was carried out in stages: thus, the process was open to manipulation by those who had access to 'knowledge' and speculation by those excluded from it by their social status. Most of those who held very small pieces of land prior to the project were led to believe that they would not have a right to apply for land in the project. Some were given the impression by the *Ghzawi* chiefs or committee members, that compensation would be less than the value of their land and that it would take years before the government actually paid them back or that they might even not be paid at all: 'It was a mess, and we were scared. They [meaning the *Ghzawis*] advised us to take our money and run!' (Interview, male peasant, *Sheikh Hussein*, owned 5d prior to the project, 5 May, 2001). Within such highly speculative environment, many small landholders were persuaded to sell their land to avoid 'greater' loss from confiscation, creating an abundance of supply of small landholdings, which led to the drop in land price. This provided a trade opportunity for those who wanted to make quick

cash from buying cheap land, which would be confiscated at higher value and for outsiders who wanted to receive land within the upcoming project. Large landholders also bought land to increase their property, which they divided between their male children, to maximise the area of land they would acquire through the project.

Land reform did not deliver the promises of equality the officials claimed it would offer. In addition to exploitation of social position and manipulation of knowledge, the provisions of the law itself left it open to manipulation. Although newspapers claimed that once land reform was implemented all the valley's residents would become equal in terms of land holdings, in reality landless practicing farmers and small landholders were only allowed to buy one unit of land of 30d – 50d within the project. Large landholders were given land according to a formula based on their previous holdings, which recreated the differences between landholdings despite minimising them. Although previous EGCA employees argue that there was not enough demand for land in the project at the time of re-distribution, some interviewed peasants confirmed that they did not acquire land despite applying for it. In fact, after the distribution of good quality land between those who had priority –and of influence regardless of priority– there was not enough to go around to the other applicants. Peasants and small landholders ended up with low quality land of categories 4 and 6, defined in Chapter Four[2]. They did not realise, then, that there was a categorisation for the land. In some cases, EGCA granted two or three related peasants a unit to share.

The situation was slightly different in *Wadi Arrayyan*. The *Turkman* had already bought land within the area and some members of the *Zainati* tribe were still holding large property although incomparable to that of the *Ghzawis*. The *Zainatis* did not attempt to redistribute land between their siblings because they did not mind receiving cash in return for land exceeding the maximum allowance set by the law. The *Turkman* landholding was affected by the land reform: Under the first agreement with UNRWA, each *Turkman* family was allocated 5d/per person (e.g. A ten-member family usually owned 50d). Those holdings were reduced to 28d – 31d units under the reform law. Although the shape and size of land changed, the make up of landholders did not significantly change. The area remained predominantly inhabited and owned by *Turkman* and a few individuals of *Zainatis*, as most of the latter preferred to sell their property and move on to urban centres (Interview, *Zainati* farmer, *Wadi Arrayyan*, 2 June, 2001).

While the law had its limitations in creating real equality regarding land ownership between various social groups within the valley, it totally overlooked women's right to access agricultural land within the project. As in Zawarteveen (1997) example of irrigation projects in Chhattis Mauja in Nepal[3], the provisions of EGCA law were based on stereotype assumptions about the structure of family unit within the Jordanian society. The distribution of land between practicing farmers were based on the

[2] Section IV.6, page 130

assumption that each family unit, consisting of a man head, a wife and children, would be able to survive on one agricultural unit. The application for the land was to be submitted by the head of the family – the husband – and the land was registered in his name. The project totally dismissed female-headed households. Women were believed to be unable to carry out all the tasks required for agricultural practice. The project was based on the assumption that the 'strong' males would plough the land and the female members of the family would sow and harvest it. Without an adult male in the family, the family unit would be considered incomplete and consequently unable to fulfil the whole process and repay the cost of the land. Consequently practicing female farmers were excluded from the land distribution process.

VI.3 Misconceptions and self-exclusion from the project – *The role of living practices and 'promises of return'*

It would be misleading to assume that lack of access to land by the majority of landless farmers was an orchestrated conspiracy led by large landowners and the *Ghzawis*. Although the influence of *Ghzawis* on the committees' decisions and their manipulation of knowledge regarding the project played a major role in access to land in the project, it was not the only reason behind the exclusion of many of the Valley's residents from it. Palestinian refugees of 1948 and tribes who led semi-nomadic lifestyles mainly depending on cattle for sustenance did not access land in the project partly because of a process of self-exclusion. This process was based on the values of these groups and their material practices, obscured by their uncertainty about their future and the future of the project.

Palestinian refugees in *Sheikh Hussein* and *Al-Mashare'* crossed the river from *Baisan* in 1948. They were primarily farmers who owned large plots of land in their homeland ranging between 100d – 1000d each. When asked whether they own land or not, almost all interviewed Palestinian refugees replied, 'Of course! In Baisan!' To them, their life, ownership and future still lie to the West of the River in what is now Israel. Most of the Palestinian refugees refused to acquire land in the project because of the possible implications of giving up the UNRWA rations card on their lives and futures. The rations card was a Palestinian's proof of his/hers status as a refugee and it was their guarantee of return to their homeland. For Palestinian large landowners buying one unit of agricultural land in the EGC project not only implied giving up their right of return. It also implied giving up between 500d – 800d for a mere 30d agricultural unit. The attachment of the Palestinians to their land is an intrinsic part of their identity, values and beliefs. In their Diaspora, memories of their lives, their olive trees and orchids 'out there' became the fantasy, which gets them through everyday hardship of being refugees in a tent. Giving up those hopes and dreams at the time would have made their miserable lives in 'temporary' refugee camps more unbearable. To many, it was also considered an act of treason (Several interviews, Palestinian refugee farmers and *As-Saqer* tribe, June – August, 2001).

[3] Chapter One, section I.5, page 48.

Furthermore, most Palestinian refugees left their homeland with nothing except the clothes on their backs thinking they will be back in a few days. They did not have the money to invest in agricultural practice, which made it more difficult for them to give up their guaranteed monthly food rations, their only source to feed their children. It is difficult to predict what would have those refugees done had they known that their 'right of return' would be still unresolved today, four decades later, or that the main reason behind the US funding of the project was to resolve the question of the refugees by settling them in the Valley. It is also impossible to know whether there would have been enough land for them to acquire in the project, had they opted to buy land then. On the other hand, there were a minority of Palestinians who came to the Valley with enough cash on them, or managed to raise the money through sharecropping. Some of those bought the land from the peasants after they acquired it through the project. They realised the feasibility of owning the land and could afford to buy it without giving up their rations cards (Interview, Palestinian refugee, landowner, *Shoikh Hussein*, 14 June, 2001).

As for the *displaced* of 1967, the project was halted at the time because of the war and the following clashes in the Valley. Jordan was not as willing to settle the Palestinian refugees of 1967 as it was for the refugees of 1948. They were not offered the same bargain and did not have the capacity to buy land within the project. The *displaced* of 1967, who led a semi-nomadic lifestyle had to sell most of their stock to survive and lived close to towns doing the odd jobs and opening small vendor shops. Some of them opted to continue with their lifestyle and had to move upward to the mountainsides in order to continue living beside their cattle, which was not allowed inside 'urban' areas anymore (Interview, *Ta'amreh* tribe, mountain hills of *Mashare'*, 17 June, 2001).

In *Wadi Arrayyan*, the situation was different for the *Turkman* tribe who opted for buying land in the eastern side of the Jordan Valley in 1950. Other Palestinian refugees argue that the *Turkman* originated from Asia Minor, as their name implies, and immigrated to the region because of tribal wars. Although they also owned large plots of land in Palestine, the entire tribe accepted to buy land in return for their rations card. It is difficult to assert why is it that they acted in contrast to other Palestinian refugees. It is possible to assume that because of their past history as a tribe, the *Turkman* were not as opposed to the notion of settlement as other Palestinians were. Indeed, such action must have created some tensions between and within different Palestinian tribes. The fact that the *Turkman* took a collective decision as a group to acquire land made it more acceptable to them since none of them would be socially excluded within his own tribe. The make up of the refugees in *Sheikh Hussein and Al-Mashare'* was a mixture of various Palestinian clans, which made it more difficult to consider such decisions at a collective level. Members of the *Turkman* tribe assert that they did not give up their right of return by buying land in the valley. It was the only way to lead a dignified life while they stayed in Jordan waiting for return; 'we owned land in Palestine; it was too humiliating for us to stand

in a long queue to get our basic needs! We were not used to that in our homeland! We had to buy land here to maintain our dignity' (Interview with a *Turkman* old man, 7 May, 2001).

The project was also not attractive to the semi-nomadic residents of the Valley. Those included few small clans from the eastern side of the valley as well as the large and powerful tribe of *As-Saqer*. Those put more value in cattle than they did in land and were not interested in shifting to settled agriculture (Household visit to family of *As-Saqer*, *Mashare'*, 30 May, 2001). Raising cattle was a way of life for them and they preferred the freedom it offered them. At the time of the project, not all the land was developed for cultivation and there were enough pastors for large number of cattle, which they could also water from running streams on the hillsides. Cattle owners did not realise that the project plans to intensify agriculture would imply a significant decrease in pastor lands and believed that herding would continue to be a profitable practice (ibid). More importantly, for *As-Saqer* tribe, buying land also implied giving up their right of return to their original homeland in which they had customary right to vast tribal territories. In addition to those, many of the poor peasants chose not to buy land in the project to avoid the risk of debt and chose to continue working as paid labour. 'It was better to know that one would get his pay and food by the end of the month, rather than be in debt and wait the whole season hoping for enough yield to cover your expenses' (Interview, male wage labour peasant in *Al-Mashare'*, 8 June, 2001). They preferred not to take the risk of borrowing money to invest in the land – a process that had cost many farmers their land in previous years.

VI.4 Access to irrigation water under the EGC Authority – *Changing perceptions, changing practices!*

To many, the EGC project was a technological and social revolution. Land reform, which was technically essential to the project, was portrayed as achieving the objectives of socialism while remaining loyal to the ideals of capitalism. On the other hand, the project was conceived as a technological revolution, which brought irrigation water to the valley throughout the year, relieving the farmers from dependence on the constraints and unpredictability of nature and giving them a sense of water abundance. When the project was first implemented, water was distributed through open cement canals. This amplified the feeling of water abundance as it could be seen gushing through the canal all year long. The availability of water had a changing influence on the valley's residents' valuation of water. On the other hand, it led to a significant change in the agricultural practice in the valley.

Although the project was associated with the abolition of previous water rights and the introduction of irrigation water tariff, the fieldwork revealed that all farmers initially perceived it as an achievement in irrigation water technology. The project was only providing water to 50% of the intended area to be irrigated. This gave the government and EGCA the freedom to distribute the entire amount of water, which was diverted from the *Yarmouk* River – 155 million m^3 – for 60,000 dunum of

agricultural land, giving each unit approximately 250 cubic meter of water everyday all year long![4] Anyone asked about the change in access to water during the first decade after the project replied: 'We were flooded with water.' During that period, farmers were asked to place a request for the amount of water they needed on a daily, weekly or seasonal basis stating the type of crop they were cultivating. Due to the availability of water, at the time all farmers were granted their requests and were able to access water all year long.

Until 1966, water tariff was not based on the consumption of water but rather on the number of dunums of specific crop they irrigated. EGCA established that each type of crop had a maximum limit of consumption per dunum per year. And only when the maximum was exceeded farmers were expected to pay an insignificant tariff for each cubic meter exceeding the all year limit[5]. As instated by Islamic practice, described in Chapter four, the tariff was then culturally acceptable because it was considered as a cost of labour carried out by EGCA. Not only was the cost quite low, it was also technically difficult to precisely calculate the amount of water consumed by each plot. As there were no water meters, EGCA employees relied on simple techniques to estimate the amount of water consumed by each land unit. They used a wooden measure to calculate the volume of water and its flow, which they would multiply by the number of irrigation hours.

The 'abundance' of water, which EGCA enjoyed during the project's first decade, made it possible to distribute land of all categories including those deemed unsuitable for irrigated cropping. Poor peasants and those coming last in the land access priority list land were allocated land of category 6, which needed to be tilled from wild vegetation and trees. The government offered peasant farmers the possibility of getting irrigation water if they cleared the land and paid a lump sum fee for each dunum they wanted to irrigate. All the interviewed peasant farmers, who bought land in the project, opted for category 6 lands because they were cheaper. They were quite satisfied to get access to land in the project, unaware that they were not granted an irreversible formal right to irrigation water. There were cases where farmers were aware of the salinity of the land allocated to them but did not have a choice in that regard. A peasant woman recalled when her husband was allocated a category 6 land and insisted to be allocated a better quality plot: 'They gave us the bad land and gave *Abdullah Al-Saleh* the best land... They told him, just take that! Complaining to other than God is humiliation![6] They gave us the same amount of water, despite the fact that high saline land needs more' (Interview, peasant female from slave ancestry, *Sheikh Hussein*, 4 June, 2001).

[4] An estimated figure based on an average 35d land unit requesting water everyday all year long.

[5] Details in Appendix II

[6] An Arab proverb: It means asking help from another human being is humiliating. So they accept the situation, without complaint.

Generally, peasants were just happy to get land at all and the valley's residents were given the impression of water abundance and a sense of independence from the unpredictability of nature. Even cattle owners shared this sense with the farmers because water was still distributed through open canals, from which they could water their cattle freely. Water 'abundance' led to a slow but significant change in agricultural practice in the Valley, characterised by the intensification of agriculture triggered by the re-distribution of land and a shift in the type of cultivated crops. The predominantly subsistence practice of a combination of wheat cultivation and grazing stock, with small vegetable gardens was replaced by commercial production of marketable fruits and vegetables especially citrus fruits, bananas, tomatoes and eggplant. According to the Valley's officials the agricultural production doubled between 1959 and 1965 (Interview, retired high ranking official in EGCA, 15 June, 2001).

The form and level of the shift in agricultural practice varied within the area. Those who had access to cash were able to plant their lands with either citrus trees or banana. Farmers needed to have enough cash to survive while waiting for the yield of banana and the orchids. Sharecroppers who could not plant trees on leased land and poor peasants shifted from wheat to seasonal vegetables, which had higher marketable value. Over the following decade, herd owners started to feel the impact of the process on their livelihoods. Pastor land started to shrink and they started to be pushed further away from water resources and residential areas. They had to travel further to get their cattle to water and they were forced to buy fodder for them. Some herd owners were forced to shift to small farming practices because they could not afford buying fodder for their cattle. They sold most of their cattle, kept two or three just to fulfil their own daily needs of dairy, and used the money to sharecrop in small parts of agricultural units.

VI.5 New institutions and values in the context of conflict

The EGC project represented a major institutional change at the national and local level. The creation of EGCA was in itself a turning point in social process within the area; in addition to the specific institutional change in the management of land and water resources. EGCA represented a new space for exercise of power and authority. It would be too simplistic to assume that by creating a new institution for the management of water and land resources, the dynamics of social process through which those issues used to be mediated would collapse. As discussed in the previous chapter, the process was embedded in wider social contexts mediated by dominant social and power relations, inherited customs and prevailing values and beliefs. The guest house as forum for male social interaction, exchange of knowledge and dealing with collective problems continued to be a major part of the daily lives of the people of the valley.

However, based on accounts of interviewees who recall the early times of the project and on observation in JVA offices today, a new '*madafa*' was symbolically created in the offices of EGCA.

During the first decade following the project, the offices of EGCA co-existed as another forum of meeting and exchange of information with the original local *madafas*. Farmers who had business in EGCA offices would almost always sit in the engineer's office for coffee or tea and spend some time exchanging conversation with other present farmers and the engineer. The engineer himself represented a new authority within the valley as he became responsible for the valley's access to water, the source of its residents livelihoods. The gatekeeper who was in charge of opening and closing water canals to the valley obtained a sense of importance, as the farmers no longer opened the canals themselves. These new forms of authorities did not exclude the authority and power of the *Ghzawi Emir*. There was only one EGCA office in the valley, located in North *Shouneh*, at least 12 km away from *Sheikh Hussein*. Only those who had a car or could afford the time to get there were able to participate in those 'meetings' (Interview, *Turkman* farmer, *Wadi Arrayyan*, 2 August, 2001). The local *madafa* remained the main forum of interaction within the area. EGCA also became a new space for the traditional powerful to exercise their own power over the EGCA employees or as EGCA employees, themselves, appointed by the government in order to make up for 'their loss' incurred by the project (Interview, old *Ghzawi* male, *Mashare'* 10 July, 2002). The fact that the *Ghzawis* were chosen to be members of the 'Farmers Selection Committee' also represented an extension of their power within the area. Fieldwork revealed that many members of the *Ghzawi* tribe occupied good positions in various governmental institutions outside the valley such as state-owned industries and the secret police service. This contributed to strengthening the alliance between the *Ghzawis* and the establishment and recreating their power in the valley within the new context of development.

The new dynamics, which the project brought to the area, contributed to the change of an entire set of values related to the valley's peoples' lives: the value of water being the most direct and significant. By paying for water and receiving cash in return for commercialised agricultural products, water and land gradually turned into a commodity and a source of cash rather than a source of living. Exchange in kind started to diminish, affecting all aspects of social life including labour and marriage customs. Wage labour slowly transformed into, monthly, weekly and daily, paid labour replacing the *murabe'* arrangement. Cash became more valuable as new commodities became available in their markets. Being herd ownership no longer represented the 'better way of life', but rather an expression of hardship. The jobs, which the construction of EGC and the new bureaucracy created, contributed to changing the value of being a farmer or a cattle owner. Employees of the bureaucracy had 'the Job' and enjoyed paid security. When asked how the project changed their lives, most of the interviewees replied 'It offered more job opportunities in the valley'. So when asked whether there was unemployment in the valley prior to the project, they would say 'No, but we were dependent on cattle!' (Interview, male peasant farmer, previously herd owner, *mashare'*, 8 June, 2001). To them, the project brought 'civilisation' to the valley: cultivating instead of herding, fruits and vegetables instead of wheat and barely, living in houses instead of tents, and having a formal job instead of depending on agricultural as a main source of income.

VI.6 Conclusion: A project for the people – *New meanings of power and inequality*

While EGC project was socially constructed in the official rhetoric as a people's project that was an icon of progress and a source of water abundance, the prevailing power relations within the valley influenced its implementation. Although the project resulted with a significant change in land ownership patterns, it became a new venue for exclusion. Most of Palestinian refugees, many poor peasants and almost all herd owners were excluded from the benefits of the project; not through overt actions or distinctively biased laws, but by various forms of manipulation and self-exclusion. First, those in power were able to manipulate their access to knowledge and their seemingly authoritative positions to mislead farmers regarding their rights in the project. Second, Palestinian refugees refused to give up their right of return in exchange for land in the project. And finally, many herd owners opted to continue with their living practices, as they were unaware that the project did not accommodate for their needs. The project's accompanying bureaucracy created new venues for the exercise of power by the traditional powerful, through their access to high ranking jobs or their influence on EGCA employees. While the project created new meanings of power within the valley, through monetarisation and creation of power influenced bureaucracy, it also contributed to changing the value of water for its residents. The shift in material practices resulted with variant levels of capacities to switch to new lucrative practices between different social groups. As development demolished feudalism, it set the foundations for new forms of inequality expressed through the symbols of development, yet rooted in prevailing social hierarchies.

CHAPTER SEVEN

THE ESTABLISHMENT OF THE JORDAN VALLEY AUTHORITY

The integrated development era

Introduction

The integrated development era in the Jordan Valley, which started in 1973, was a major turning point at the entire Jordan Valley level. Focusing on the importance of intensified agriculture to the Jordanian economy, a predominantly irrigation water project became an icon of development at the national level. Similar to EGC project, the socio-economic development of the Jordan Valley served important political objectives for the establishment, which was coming out of a short yet brutal civil war that left the Jordan Valley physically battered and the monarchy's popularity significantly challenged at both the regional and national level. The integrated development plan, which enjoyed royal patronage from the Western educated Crown Prince, Hassan, involved the reclamation of more agricultural lands and providing them with irrigation water, accompanied by the construction of housing projects and building of towns' infrastructure and services.

The implementation of the integrated development plan contributed to *shaping* the dynamics of socio-environmental conflict within the valley as much as it was *shaped by* them. The availability of subsidised irrigation water and agricultural material, in addition to the new possibilities for entrepreneurial agricultural practices triggered by new technologies and the presence of cheap foreign labour, created a form of a 'gold rush' towards the valley. The change in agricultural practice, which was triggered by the EGC project in the 1960s, started to rapidly transform into a capital accumulation practice rather than sustenance one. Although agricultural practice remained a living practice for the valley's peasants, the value of water was redefined as another agricultural production input. In this context, water became progressively accessed through and regulated by an individualised relation between the farmers and the new bureaucracy. This chapter begins by presenting the political context within which the project evolved and moves on to demonstrate how the changing contexts within the valley *affected* and *were affected by* the dynamics of the social process, as the residents of the NJV became part of a wider construct expanded to include a wider web of relations that involved new actors, including new comers to the valley and various agricultural and irrigation experts who became the interface through which the farmers practiced agriculture. The chapter's findings are based upon secondary information from newspaper archives, laws and regulations, and unpublished studies as well as primary data collected through interviews with the local population, government officials and employees, local experts, and private businesses.

VII.1 Integrated development for the establishment of political stability - *The Jordan Valley development institutions*

The establishment of the Jordan Valley Commission, in 1973, marked the end of a five-year period of regional and internal conflict, which left Jordan with more population and political challenges than those faced during the 1950s. The Israeli occupation of the West Bank in 1967 brought to the East Bank of Jordan another influx of Palestinian refugees (World Bank, 1997). More critical to Jordan's political stability was the growing presence of Palestinian guerrilla organisations, *feda'yyeen*, which used the Jordan Valley as their front against Israel in the late 1960s and eventually turned against the Jordanian Monarchy and threatened its continuity in 1970. Two-year urban clashes, which captured the lives of 5000 fighters on both sides as well as civilians, ended with the crushing of the *feda'yyeen* who were almost all arrested in 1971. Many of the *feda'yyeen* were released a few days later to either leave to other Arab countries or return to demilitarised life in Jordan (OnWar, 2003). Despite the illegality of the Palestinian guerrillas' actions within the Jordanian state, the sympathy, which the majority of Arabs felt towards the Palestinian cause, left King Hussein in a dire need to improve his popularity within his own country.

In 1972, the Jordan government started a process of reconstruction in the Jordan Valley: rebuilding the destroyed sections of the EGC and repairing the destroyed roads. Since 1971 'prominent economic experts' were calling for the revival of the agricultural sector, arguing that Jordan was an 'agricultural nation' (*Addustur*, 25 September, 1971, p.5). The call emphasised the need for: First, the shift from 'commercially unfeasible' wheat production to export oriented fruits and vegetables (*Addustur*, 26 February, 1972, p.5); second, to increase the agricultural land area by providing irrigation water to rainfed land and the desert; and third, to employ the latest technologies in agricultural practice, which would improve the production, while providing job opportunities to university educated agricultural engineers in Jordan (*Addustur*, 25 March, 1972, p.5). The advocates for this change based their arguments on scientific grounds, using statistical information. Some were even reminiscing over the 'past glory of agriculture' in Jordan, when the majority of the Jordanians relied on it for its income, despite the fact that in the past agriculture was predominantly a sustenance practice that was not valued by the amount of cash it generated, but rather as a living practice[1].

Under the increasing political and economic challenges to the establishment outlined above, the Jordan Valley became again the centre of the government's attention (Interview, former JVC official, 15 June, 2001). The Crown Prince, Hassan, gave particular interest to the development of the Jordan Valley, under the banner of integrated rural development. The plan involved social and economic development and a comprehensive development plan for the utilisation of water resources. The Jordan Valley Commission (JVC) was established to carry out the integrated rural development plan, whose authority was reinforced in 1977 by the establishment of the Jordan Valley Authority (JVA).

[1] Chapters five and six.

The official objective of the plan was to encourage in-migration to the valley through the provision of social and infrastructural services and the creation of job opportunities in the agricultural sector and the newly established bureaucracies. The development process, which was funded by loans and grants from the US government, involved the construction of new irrigation projects such as dams and networks, the extension of the canal towards the south of the valley and the provision of irrigation water to agricultural land above the canal level through pressurised system. It also included the construction of housing projects, the building of towns' infrastructure as well as schools, medical centres, and the establishment of agricultural co-operation societies to provide services to farmers. In the following decade, the project became a showcase for Jordanian development achievements (Van Aken, forthcoming).

The project served a number of political objectives: First, as in the case of the construction of EGC, the project contributed to improving the image of the Monarchy. The popularity of King Hussein was mainly boosted by the increasing formal job opportunities in the civil services created in the valley; such as teaching, transport, health, construction and engineering. Later on, those who received basic schooling education found job opportunities in the Jordanian Army, which also provided excellent benefits including access to health services in the highly equipped army medical centres (Several interviews, Jordan Valley residents whose sons opted to work in the Army, June – August, 2001). Second, the project created a physical and demographic barrier between Jordan and Israel. As the project area was being developed, the Valley's border with Israel was being increasingly fortified. Israel was only few metres away from Jordan's side of the river. The presence of the Jordanian army on the River's Bank was not only a defensive force. The Jordanian and the Israeli governments were not interested in disrupting the *status quo* between them. Part of the Jordan Army's responsibility was to prevent the infiltration of Palestinian guerrillas to Israel and the Occupied West Bank, which in the previous years resulted with the Israeli retaliation against civilian areas.

Finally and most importantly, the project contributed to absorbing the refugees who flooded the refugee camps. During the 1970s, many of the young male Palestinian refugees who were provided job opportunities through UNRWA to work in the reconstruction of Germany during the 1950s returned to Jordan. The Jordan Valley provided them an investment opportunity in the agricultural sector, which they perceived would offer them a more dignified life than returning to refugee camps in the urban centres (Interviews, three Palestinian refugees who returned from Germany in the 1970, 15 – 18 July, 2001). As the project expanded, it provided irrigation water to 155,000d in another 14 development areas along the valley, slowly turning the valley into a 'Development Project' (Van Aken, forthcoming). This resulted in transforming the refugee camps 'which in other parts of Jordan were so important in "preserving" and reproducing a defined Palestinian identity and political mobilisation' into planned development villages (ibid). Although the Palestinian refugees did not acquire land in the new development areas, the intensification of agriculture created for the expert

Palestinian population of farmers a market of land units offered for lease by original peasants from the valley and nearby hillside towns. Although the Palestinians retained their rations cards, their identity as refugees was concealed by their integration in the project and the collective identity of 'practicing farmers' as defined by the language of JVA law.

VII.2 Access to land and irrigation water in the integrated development era – *The 'gold rush' of the Jordan Valley*

As the project expanded, the Jordan Valley Authority was more concerned with intensifying agriculture and bringing investment into the valley than achieving equality, as claimed by the original EGC project. Although the target development areas of the 1970s and 1980s are outside the research area, it is important to shed some light on the process as it influenced the dynamics of socio-environmental conflict within the research area through two main aspects: the integrated development which targeted the entire valley and the particular influence of the expansion on the NJV. The process of agricultural intensification through the application of new technologies was introduced to all development areas within the valley and was provided through the subsidiary institutions of JVA. As the irrigation water project expanded, more water rights were confiscated form agricultural land east and above the canal level within the NJV. The process involved the re-distribution of agricultural land and the provision of irrigation water to those lands through a modern pressurised system, which brought the water, collected from the side valleys and stored in the canal, all the way up to those agricultural units (Interview, high ranking JVA employee in NJV, 30 May, 2001).

In terms of access to land, the implementation of the land reform during the first decade of the integrated development was mainly focused on achieving the technical requirements for the irrigation networks and the intensification of agricultural practice. The government investment in the Jordan Valley, the new external markets opened for Jordanian products and the flexible labour laws which allowed the import of external cheap labour attracted many of the Jordanian élite to invest in the Jordan Valley. The board of the Jordan Valley was given the authority to sell land within the project to outsiders at its own discretion. Members of the Jordanian Monarchy[2] and élite acquired undistributed agricultural units in old development areas as well as units in newly re-distributed development areas. However, land was predominantly re-distributed to its original landowners as the project expanded towards the south. A JVA official recalled that the government could not enforce

[2] There is no documentation to validate this argument. However, the agricultural units within DA10 – DA17, which the author was informed were acquired by members of the Jordanian monarchy are not listed in the land ownership lists acquired from JVA database, leaving a lot to speculation. The author was also present at a meeting between NJV farmers and officials from JVA and the Ministry of Agriculture, when some farmers openly talked about the special treatment some princes were receiving. One official confirmed the allegations by arguing that the Prince was entitled to services since he owned agricultural land in the Valley.

the land reform on the powerful *Idwan – Bani Shakher* tribe the way it did on the landowners in the NJV (Interview, high ranking JVA official, 19 April, 2001). The potential gains of the project to investors also attracted other urban residents including prominent employees in JVA, who were not legally entitled to buy land in the project. Some of the employees of JVA made arrangements with poor farmers to buy land units within the project on their behalf and then transfer its ownership to JVA employees (ibid). Urban residents used the same method or managed to get documentation that stated they were residents within the sub-governorate to prove their entitlement to land within the project (ibid). The peasants of the valley expressed more resentment towards individual outsiders buying single land units than towards large landowners from within the valley. To them, the power of tribes like *Ghzawis* or *Idwan* was undeniable and by the same token their historic entitlement to land within their territories was unchallengeable (Several interviews, peasants, *Sheikh Hussein* and *Mashare'*, June – August, 2001).

For some peasants the resentment towards outsiders and some members of the monarchy stemmed from the fact that outsiders' access to land resulted with the displacement of those peasants (Interview with Palestinian refugee who was displaced from land which he cultivated since the 1960s, *Sheikh Hussein*, 10 July, 2001). As mentioned in Chapter six, not all the land within the project area was redistributed in the 1960s, because they were not cleared from bushes and wild trees – the *Zor*. Some 20 families of landless refugees cleared those areas, distributed them amongst themselves, around 10d each family, and cultivated them with wheat and vegetables for their sustenance. They did not have deeds to the land and received irrigation water from nearby farms, which could spare some quantities due to excess of supply at the time (ibid). The government turned a blind eye to those farmers until the 1980s when they were denied irrigation water because they did not have title deeds, and were forced to switch to rainfed agriculture. As more interest was being paid to the Jordan Valley, JVA was running short of land to sell and found the *Zor* – river flood plain – as one solution to that problem (ibid). They evicted the farmers and cleared the land from their wheat on the basis that the land was originally owned by a prince, who is now claiming his land back. It is said that part of the land was fenced for a member of the monarchy and the remaining area was sold off to investors from outside the valley and one unit was sold to a member of the *Ghzawi* family (ibid). Despite the fact that they did not have title deeds, the landless peasants believed they had more right to it than those who acquired it: 'This land was full of wild trees! My father cleared it, spent his nights in it until it was turned into a fertile land!' (Interview, male Palestinian refugee farmer, *Sheikh Hussein*, 10 July, 2001).

In 1977, when the Jordan Valley Authority was established, the law forbade the transfer of land, except to JVA or to immediate members of family. However, access to land within the project continued to be affected by the manipulation of the law and regulations in the 1970s and 1980s. Braced with the knowledge of the upcoming plans of the government, many of the *Ghzawis* used the

same methods of their fathers to increase their ownership in the 1980s (Interview, *Ghzawi* large landowner, 15 June, 2001). The land reform of the 1950s was implemented only on DA10 – DA25 of the NJV, which was located to the west of the canal, because it was below its level and could be irrigated from the canal by gravity. The land to east of the canal was on the mountainsides and could not be irrigated by gravity. It was only in 1979 when JVA started using the pressurised irrigation systems that it became possible to irrigate those lands from the canal[3]. The *Ghzawis* started buying land within the new development area (DA33 – DA39), redistributing them between their sons in order to maximise their ownership within the area (ibid). Although the research did not specifically include those development areas, but the increased ownership of the *Ghzawis* within the NJV as a result of their new acquirements is worth noting as another fact of significance to the perception of their power within the valley (Several interviews, peasant and Palestinian farmers, *Sheikh Hussein* and *Mashare'*, May – August, 2001).

Banning the transfer of land to non-members of the family in 1977 (Article 21.k of Law no.18), paved the road to new form of women abuse. Interviews conducted during the fieldwork revealed that in order to sell a piece of land to non-relatives, fathers and brothers would marry off their daughters and sisters to the potential buyer, receive the price of the land as a dowry, transfer the land to the female relative name who would then transfer the land to her 'husband'. Some of those marriages were dissolved shortly after the transaction was done, leaving the women with a 'divorcee' stigma in a conservative society. In other cases, the marriage would be sustained leaving the woman trapped in a convenience marriage. This practice was stopped in 1990s after JVA officials realised that a loophole was used to overcome the constraints of the law. To minimise the illegal transfer of land, a memorandum was passed that allows the transfer of land between a husband and wife *only* after five years have passed since their marriage or upon conceiving a child. Although the regulation was not passed in order to protect JV women from being forced into unwanted marriage contracts, it led to minimising the exploitative social practice for purposes of exchange of land. Although interviews with young females in the research area revealed that there are many cases of consensual marriages in the Valley, marriage remains perceived as a social practice with interrelated social status and material assets implications.

The new pressurised network was limited to the new DAs, while the old development areas continued to get water through open cement canals by gravity. Some farms also continued to benefit from nearby water streams as the confiscation process was not fully implemented yet and JVA was turning a blind eye to them (Interview, female Palestinian farmer, *Mashare'*, 17 July, 2001). It was normal practice for many farmers to dig within their land and pump the shallow drainage water passing through (Interview, *Ghawarneh* peasant farmer, *Sheikh Hussein*, 10 July, 2001). The availability of technological development and equipment previously inaccessible to the valley allowed

[3] Map VI.2, p.161

landowners who could afford it to maximise their benefit from the delivered irrigation water. They dug large pools within their land, covered it with plastic sheets and used a motor to pump water from the cement canals into the pool, which would allow the storage of extra water. The diameter of the pool varied between 3 – 6 meters depending on the power of the pumping motor; some large landowners would spare areas up to one dunum or more for the storage pool (Interview, male *As-Saqer* sharecropper, *Mashare'*, 2 June, 2001). Having a pool and a motorised water pump became another symbol of affluence. The more cash the farmer had access to, the more powerful pump he could buy and consequently could store and utilise larger quantities of irrigation water (ibid). This was not a feasible practice for farmers cultivating on rented land, who could not invest in motorised pumps, building pools or expensive plastic sheets because they were not sure where they would be leasing the following year. Although they could move their pump and plastic sheets, digging a pool every year was still unfeasible (ibid).

Although some farms could access more irrigation water than others, none of the interviewed farmers in the valley seemed to have suffered from shortage in irrigation water during the 1970s and a good part of the 1980s. Even during low rain seasons, while urban dwellers were being asked to rationalise water use, Jordan Valley farmers were untouched by its effects. The sense of water abundance was also caused by the fact that, in the development areas serviced by open canals, water supply to the sub-canals was 50% more than the estimated total demand to irrigate the farms on the line, to make up for the possible loss of water through evaporation (Interview, Palestinian 1967 refugee farmer, *Mashare*, 17 July, 2001). In reality, the quantity of evaporated water varied and never reached that quantity. Thus farmers received water quantities exceeding their original needs while water bills were based on the total hours of water supply multiplied by the estimated water flow (ibid). To the mind of the farmers, they were paying for the time consumption of water rather than the quantity of water, which continued to be acceptable to them (Interview, *Ghawarneh* peasant farmer, *Mashare'*, 2 July, 2001), despite the fact that water cost/m^3 tripled by 1974 (By-law code no.35 of 1974[4]).

While the government was giving full attention to the development of water resources for the intensification of agriculture, little attention was given to the provision of domestic water in the valley, and the increase of demand at the national level. The residents of the valley continued to get domestic water from water springs till the late 1970s (Interview, JVA employee, 30 May, 2001), when JVA installed public water faucets in each town or village. All interviewed women recalled queuing for hours to get domestic water; some of who were still young girls at the time. Older women recall that they used to fight for their turn because they sometimes ended up waiting till midnight. So although the water source was brought closer to them, they did not feel that it alleviated the difficulty of collecting domestic water but rather aggravated it. The burden of everyday life for the valley's

[4] Detailed in Appendix II.

women was only lifted in 1984, when they got water connections to their residences. In contrast to irrigation water billing system, domestic water connections involved the installation of a water meter to gauge consumption, and households were billed on the basis of cubic meter consumption (By-law code No.70 of 1981[5]).

VII.3 Agriculture as a commercial practice – *The commodification of water and the changing character of the Jordan Valley*

The most observable change in the context of the integrated development process was that in the 'moment' of material practices, specifically the change it brought to the perception of agricultural practice within the valley. The policy of encouraging the intensification of cash-generating agriculture was possible to implement by subsidising new technologies as well as irrigation water, thus attracting agricultural investment to the Valley. Foreign aid packages included technical assistance to JVA and the Ministry of Agriculture (MoA), providing improved seeds, fertilisers and pesticides. The process also involved the introduction of new irrigation and cultivation technologies such as the sprinkler systems and plastic greenhouses to produce new high-value vegetables. The adverse environmental effect of improved seeds and chemical fertilisers and pesticides on the soil and water quality was not immediately felt and they were widely adopted by the farmers because they were subsidised. The use of expensive technologies such as plastic greenhouses, sprinkler systems or motorised pumps remained exclusive to those who could afford to invest in them.

Although newly established agricultural credit institutions funded farmers' investments with low-interest loans, farmers did not have equal access to those loans as they did to subsidised water and technologies. The amount of the loan was restricted by the value of the guarantees the applicant was able to provide. Loan applicants had to mortgage their land against the loan and had to guarantee the payment with a co-sign of a person who had a regular monthly income, giving more significance to formal employment. Thus, landless farmers were excluded from access to those funds, while landowners and the affluent Jordanian élite were more qualified to access larger credit facilities. Thus, the social change, which was triggered by the construction of the East *Ghor* Canal in the 1960s, started to take a new form of inequality in the 1970s and early 1980s.

The dynamics of the relation between the peasants and the valley itself as their living environment was influenced by the development of agricultural practice. The accounts of peasant farmers of their lives during that period revealed that, although agricultural practice remained a living practice, its definition started to take new dimensions through the new rhetoric of development. Irrigation water was no longer perceived as part of triangular relation between wo/man, land and water as a living process. It became another input in a production process, which also includes other agricultural requisites such as pesticides, fertilisers and irrigation technologies, foreign labour, packaging and

[5] Ibid.

transport costs and loan payments. All the agricultural practice inputs acquired cash value and the profits were calculated by subtracting the input costs from the gross cash income made from selling the agricultural production in the central market. Water as an environmental resource remained taken for granted as JVA was providing it all year round, but became a negotiated commodity as well. In seasons when farmers suffered losses due to frost or as a result of market mechanisms, they negotiated the price of water as an agricultural input (Interviews, farmers of various origins, May – August, 2001). Affluence was no longer only linked to the size of land ownership, but was also linked to amount of loans one is able to access, the extent of agronomic knowledge they are able to acquire, the irrigation and agricultural technologies they are applying and, indeed, the cash profit made out of the process, which largely depended on access to proper markets (Interview, Patestinian sharecropping farmer, *Sheikh Hussein*, 2 July, 2001). Discrepancy between the ability of different farmers to access 'symbols of affluence' continued to exist. For some farmers, the process remained a sustenance practice, making enough cash to buy the needed necessities for the family's survival such as bread and dairy, which they no longer produced themselves (Several interviews, peasants of slave ancestry, *Sheikh Hussein*, 28 July, 2001). This was especially the case for poor female farmers, who had less access to male dominated credit associations and the services of MoA (Meeting with female Palestinian farmers, *Mashare'*, 12 May, 2001), which overlooked the presence of female farmers in the Valley, or the market.

The idealistic image of the owners-operators community the project was supposed to create (Interview, former JVA official, 15 June, 2001), turned into struggling small farmers trying to offset the discrepancies of access to capital, knowledge and technology through a semi-commercial semi-family practice where the father and females of the family would work, while the young males sought formal employment. The women provided free labour to the operation, while the male head of the family controlled the family's modest finances (Several household visits, in *Sheikh Hussein* and *Mashare'*, May – August, 2001). Some original peasant small farmers sold their land or leased it to Palestinian refugees once their daughters got married (Interview, daughter of a peasant of slave origin, *Sheikh Hussein*, 25 April, 2001). The income which commercial-family practice generated varied from one family to another depending on what they were able to cultivate and how much they could invest in the new irrigation technologies. As younger males were immigrating to urban centres seeking formal employment, the need for labour in farms was increasing. Slowly the valley was being flooded by cheap foreign labour from Egypt and Pakistan who enjoyed unrestricted access to the Jordanian labour market (Interview, Journalist focusing on JVA issues and farmer, *Ghawarneh* peasant, 29 April, 2001). The presence of the vast majority of foreign labour within the valley was not caused by single job opportunities available in small farming operations. Those were mostly working in large agricultural practices owned by original large landowners and Jordanian élite entrepreneurial operations (ibid).

During this period of agricultural expansion, sources of income were also becoming more diversified. This diversification was first and foremost caused by the new supplementary agricultural services created by the intensification of agriculture (Interview, *Turkman* farmer, *Wadi Arrayyan*, 23 May, 2001). However, two more factors contributed to the changing character of the valley. First, the shift in agricultural practice from sustenance to commercial crops created the need for outlets to provide the products, which used to be homemade, such as dairy products and bread. Slowly grocery shops selling all sorts of new products and imports, agricultural material suppliers and other off-road service shops started to appear on the flanks of the main road across the valley (ibid). The second factor, which contributed to the boom of new living practices in the valley, is the population surge caused by the influx of foreign labour and the weekly urban visitors to the valley who increasingly perceived its as a weekend retreat during winter (Interview, Female CBO leader, *Sheikh Hussein*, 28 July, 2000). As mentioned earlier, the integrated development plan involved the construction of housing projects for the valley residents. The design of the housing units overlooked the cultural needs of the valley's residents, such as the ability to add new rooms to the house for married children who until today live in extensions within their families homes (Interview, *Shafa* landowner and agricultural engineer, 30 May, 2001). While most of the valley's residents rejected those units, the affluent valley residents bought the units as an investment and rented them to the foreign workers (ibid). Realising the problematic nature of the designs, JVA abandoned the housing projects for a site-and-services project, which was primarily devoted for the residents of the valley. However, members of the Jordanian élite who owned agricultural land in the valley managed to acquire residential land in the valley on which they built small getaways close to their farms (ibid).

Thus, a process introduced by a new institutional arrangement, which started as 'water project' for the benefit of the valley's residents, was articulated by dynamics of socio-environmental process within the valley and contributed to creating a ripple effect on those dynamics. The dominant discourse of development and modernisation brought unprecedented changes to the values through which the relation between the valley's residents and their environment is understood. The agricultural focus of the project reinforced the importance of agriculture as a material practice for the dwellers of the valley. For many, it slowly transformed from a living practice into an enterprise; a good source of capital as were many other enterprises taking place in the valley, such as trade, transport or property management. For peasants and small farmers, agricultural practice remained the only way they knew how to live, that happened to be lucrative at the time.

VII.4 State-sponsored cooperative institutions – *'Collective action' in fragmented contexts of exclusion and inequity*

Although the EGC project was a significant institutional change regarding the management of the land and water resources in the valley, it is the integrated development era that is characterised by an intensified process of institutional building. At the national level, this was a process of reinforcing the

power of the state as a central authority and its image as the only provider of services. The establishment of JVA was accompanied by supportive institutions for managing the market, setting up crop patterns and providing expertise agricultural advice; thus creating a technocratic set-up to enhance the sentiments of loyalty towards the establishment at the local and national level (*Addustur*, 27 January, 1982). Fundamental to this process was the construction of the government as the sole authority on expertise knowledge about management of water resources and agricultural practice, only preceded by foreign experts from international aid agencies. The process dismissed farmers' traditional knowledge and skills and they were slowly transformed into passive implementers of the government's agricultural policies. A newspaper article which was reporting a meeting between JV farmers and government officials and experts commented that meetings dedicated for discussing strategic issues need not be attended by the farmers who are 'of various levels of education and mostly illiterate. They should be exclusive to *experts* and *specialists* who understand the *language of science* and the international vocabulary of agricultural policy, market mechanisms, political and diplomatic relations and international interests' (ibid; italics added).

The bureaucratic setup with its procedural practices, which accompanied the establishment of the JVA and its subsidiary institutions, led to the individualisation of the farmers with regards to access to water resources and agricultural services. As per procedures set by the law (No.18 of 1977), paperwork became the medium through which farmers would apply for water turn, crop licenses, credit, and/or agricultural material. This led to the break down of some of the aspects, which used to be negotiated and accessed through the *madafa* meetings. The *madafa* itself did not disappear nor was the discussion of water resources and agricultural problems; but decisions regarding those issues were taken within the bureaucratic spaces (Visit to the *Ghzawis madafa*, *Sheikh Hussein*, 15 June, 2001). The *madafa* continued to be an important forum for social interaction: it remained a space for exchange of ideas and became the medium through which news are circulated including JVA memorandums. Despite the death of the *Emir* of *Ghzawis*, the *madafa* of his decedents continued to be a field where power and status were demonstrated and alliances were reinforced – an exclusively male field of interaction (ibid).

The establishment of state-sponsored co-operative societies and institutions was considered the best vehicle to ensure the successful implementation of the government policies in the Jordan Valley (Interview, high-ranking JVA official, 25 July, 2001). Co-operative societies were established and initially funded in the valley in order to offer agricultural loans and services to the farmers. The services mainly involved the provision of agricultural materials at subsidised prices. The consensus between all interviewed farmers was that none of the societies sustained a successful independent presence and they recall a long history of rise and fall of various non-memorable societies. Of all those efforts, the Jordan Valley Farmers Association (JVFA) was the longest surviving 'collective institution' within the valley until its dissolution and attachment to the General Jordanian Farmers

Association (GJFA) established in 1997. JVFA was sustained financially by the continuous governmental funding (Law No.19 of 1974). All 'practicing farmers' were automatically considered members of the association and had to pay a minimal fee of JD3/year to activate their membership and be able to nominate and vote its chair and board members (ibid).

The JVFA was quite ambiguous in its definition of the objectives and responsibilities of the association. According to its law, the objective of the association was '...enabling the farmers to contribute to the design and implementation of the government's agricultural policies and programs in the valley' (Article 3, ibid), thus giving the association a political nature. However, the specific responsibilities, which the same law specifies for the association, were of service-oriented nature. Those included: first, providing the farmers with agricultural loans and all the needed agricultural production inputs, except water; second, carrying out some agriculture-related activities in a collective manner such as pest control and the transport of crops to market centres; and finally, the marketing and retail trade of Jordan Valley agricultural products (Article 12). Almost all interviewed farmers agreed that in practice, the association did not fulfil any of its political objectives and was only able to perform the first of its three service-oriented responsibilities. Many compared the association to small grocery stores that sold all sorts of domestic supplies. A few would say that it was effective until it was dissolved into the GJFA in 1997 (Interview, ex-chairman of JVFA, *Ghzawi*, 10 April, 2001).

The 'failure' of JVFA to perform a more effective role can be attributed to the dynamics of socio-environmental conflict at the national and the Jordan Valley levels. At the national level, the government needed to create a controlled collective institution, which would facilitate the implementation of its agricultural policies, without transforming into a political lobby (Interview, *Zainati* farmer and political activist, 24 July, 2001). This can also be derived from the provisions of JVFA law: The financial support, which the government supplied to JVFA, was its lifeline and the means through which it could control its action. The fifteen-member board consisted of ten elected members and five members representing the government. The authority, which the five members enjoyed as representatives of governmental institutions managed to pacify any occurring political tendencies and to limit the general assembly and the board meetings to non-political issues. By establishing JVFA as the only avenue for formal collective action in the valley, the government constrained the farmers from taking any political-oriented action outside its confinements. This was also possible through the implied serious threat the farmers felt in a country ruled by martial law since 1957, which banned any form of opposition political activities and most basic forms of free political expression (Brand, 1992). A politically active farmer from the valley (24 July, 2001) recalled being imprisoned because he called for a farmers' meeting to discuss issues, which they believed were not being properly addressed by the association. Among many other excluded issues was the issue of

the management of water resources, which was always dismissed as a highly technical issue and the responsibility of JVA experts and engineers.

The ineffectiveness of the JVFA was further aggravated by the prevailing dynamics of socio-environmental conflict within the valley, which were taking new forms and dimensions in the context of the integrated development. Achieving equity within the valley was not the main objective of the integrated development era. The further manipulation of land reform laws by large landowners and the Jordanian élite, the influence of the project on the material practices and its consequent effect on the values, beliefs and fantasies of the valley's residents contributed to creating new socio-cultural and socio-economic ridges within the fabric of the valley as well as reinforcing old ones. Although the law did not have any direct reference to achieving equity among the valley's residents, it attempted to create a collective identity for all the farmers within the valley by using the term 'practicing farmer' – *Muzare'* in Arabic – when referring to any individual practicing agriculture within the valley whether he had a title deed to the land, was leasing it or worked as a paid labour. It also referred to landholders who did not practice agriculture in their land! The new development rhetoric attempted to conceal not only the identity of Palestinian refugees within the valley (Van Aken, 2003), but also to conceal the still alive social and economic inequalities existing within the valley, which were not only origin-based but also augmented by the realities of the material practices including access to capital within new socio-economic and political contexts.

The fieldwork characterisation of the valley revealed that the social make-up of the valley in relation to land and agriculture could no longer be simply divided into large landowners, mainly of powerful tribes and small number of urban élite, and peasants, whether landless or small landowners. The agricultural 'gold rush' of the time created new sub-categories within the valley largely due to newcomers and the possibility of access to more agricultural units within the project areas. One possible way is to organise those sub-categories is by dividing them into two main categories related to the level of involvement of the benefactor in the agricultural production process. Large landowners do not work within their land and hence they are the first main category. Those who are involved in the agricultural production process are categorised as farmers. Based on interviews with farmers within the research area, those can be divided into four sub-categories: wage labour, practicing small farmers, practicing farmers on large plots and small entrepreneurial farmers.

Wage labour includes foreign workers, poor landless male and female peasants. *Practicing small farmers* are either farmers who owned and cultivated one unit or less of agricultural land *or* farmers who leased or sharecropped one unit of agricultural land. In both cases those farmers would be working in the land themselves with the help of their own family members and possibly one wageworker. Those who owned the land they worked on are mostly peasants of the valley, while those who leased or sharecropped are mostly Palestinian refugees. *Practicing farmers on large plots* are farmers who owned

and cultivated *or* leased two or three units of agricultural land. Those mostly worked in the land themselves with the help of hired labour and sometimes the help of their own family members. Palestinian refugees make up the majority of this category. *Small entrepreneurial farmers* were either residents of the area or originally from the area but residing in nearby towns and urban centres who took advantage of the boom and started farming businesses in the area to supplement their income. Those mainly leased the land from the peasants of the valley or absentee landowners and usually cultivated high-value agricultural products such as cherry tomatoes or flowers.

Large landowners can be sub-categorised into three groups: absentee landowners, entrepreneurial absentee landowners, and entrepreneurial large landowners. *Absentee landowners* are those residing outside the area, mainly in nearby towns and urban centres, who had access to the land as mountainside residents – *shafa* – prior to EGC project or through the project under the provision of EGC law. Those were not interested in practicing agriculture, but preferred to keep the land as fixed income generator through renting. *Entrepreneurial absentee landowners* are those who supplemented their income by establishing farms to be managed by an agricultural expert, called *wakeel* (Interview with *wakeel, Sheikh Hussein*, 16 July, 2001). He would manage the production process and hire labour working in the land, which would not be less than three units in size (ibid). This category of large landowners includes members of the Jordanian monarchy, former and present ministers and prime ministers, government officials and other members of the Jordanian élite. Finally, *entrepreneurial large landowners* are the original landholders in the valley, who managed to retrieve large part of their property after the project. Those mostly chose not to be as involved in the agricultural production practice as their parents. They hired *wakeel* to manage their property for them while they sought other forms of material practices or formal employment in high governmental positions. Some of them live in nearby urban centres, but many of them moved on to live in Amman (Interviews with *Ghzawi* large landowners, April – July, 2001).

This categorisation gets further complicated once gender and origin are included, especially that origin is further complicated by the various realities of those belonging to different origins (e.g. Palestinian refugees as opposed to Palestinians who became part of the Jordanian élite; peasants from the *shafa* as opposed to peasants from the valley or those of slave origins). Regardless of the other aspects of sub-categorisation the above categories by their own definition represent a variety and sometimes conflicting aspirations, values and definition of the world they were living in and how agricultural practice relate to it. Furthermore, their access to power and various forms of social networks, as well as their position within existing institutions contributed to the formulation of their relation with the JVFA, the role they played within it and importance they placed on the association's influence on the prevailing social processes and their material practices. For example, absentee landowners were not interested in the activities of JVFA as it did not seem to affect them. Entrepreneurial absentee landowners did not express interest in the activities of JVFA either

(Interview, entrepreneurial absentee landowner, *Wadi Arrayyan*, 12 July, 2001). This was not because they did not have any aspirations and views regarding how things should go in the valley. It was because this particular group had access to power and social networks at higher levels. Many were in influential positions directly related to the valley and were able to dictate policies and programs affecting it (Interview with various entrepreneurial absentee landowners from urban élite, July, 2001).

For entrepreneurial large landowners, the association became a new field for practicing their power and reinforcing their status. It became another forum were solidarity and alliances are practiced. Some farmers claimed that some of the nominees to JVFA, who were from the powerful tribes, used to offer farmers to pay their accumulated fees in return for their votes. Over the years, many members of powerful tribes rotated on the board and chairmanship of JVFA. The death of the *Emir* of *Ghzawi* in the late 1960s left the *Ghzawis* divided into two main tribes *Al-Hasan* in *Al-Mashere'* and *Al-Mithgal* in *Sheikh Hussein* (Various interviews with elders of both areas, May – August, 2001), who had strong representation in the Valley and some of whom had reached high ranking positions in JVA. The establishment of forms of alliance between some practicing small farmers and those who they were willing to vote for was considered a way to access more privileges within JVFA (Interview, *Turkman* farmer, 30 April, 2001). There is no documentation to back up such allegations. However, it does represent the perception of the valley's residents of JVFA and affect their decisions regarding participation. It is another aspect through which socio-environmental conflict is being shaped and represented in the valley.

Similar to the *madafa*, JVFA became a space for the practice of inequity and exclusion. But while, the *madafa* gave those who attended it a 'false' sense of inclusion despite the inherent hierarchy of social relations, which was reinforced by the way the exchange of ideas was conducted with all the attendees forming a circle in a space similar to their homes, JVFA was a new space where farmers sat in rows facing the board members, which reinforced the hierarchical relation between them. Although under JVA law wage labour were considered practicing farmers, they were excluded from JVFA and their problems and issues were not considered of interest to the association's members (Several interviews, male and female wage labourers, *Sheikh Hussein* and *Mashare'*, April – July, 2001). Consequently, the working and living conditions of wage labour were never regulated and they continued to work under grieve conditions. Women farmers whether as wage labour or as small practicing farmers were also excluded from participating in JVFA (Interviews, small female farmer, *Mashare'*, 6 May, 2001 and large female practicing farmer, *As-Saqer, Mashare'*, 24 July, 2001). The law did not exclude women farmers and wage labour from the association, but it did not specifically call for their involvement, which was convenient to large landowners and male farmers. Women were excluded from participating JVFA because of the prevailing social values, which separated women from spaces of male interaction. They bought agricultural materials from JVFA shops but they never benefited from the agricultural loans provided by the association, nor were they able to participate in

meetings of the general assembly discussing issues that touched their lives as it did the male farmers of the valley (ibid).

VII.5 Conclusion: The myth of collective identity in individualising institutional contexts

Although the integrated development plan aimed at achieving political stability through the construction of the collective identity of 'practicing farmer' and 'development areas', the Jordan Valley was becoming a more complicated field of conflict. The open discrepancy in access to power and social networks through which policy and projects are influenced was concealed by the absence of those who were able to make the best out of the changes brought to the valley through JVA. The relation of real 'practicing farmers' with water resources became obscured by irrigation technicians who became the interface through which the farmers interacted with irrigation water and by its disconnection from the realities of rain seasons affecting the entire country. The impact of intensified agriculture using chemical materials on the quality of water and soil in the valley remained unknown to and unfelt by the valley's farmers at the time.

Although traditional spaces of social interaction within the valley did not disappear, they were replaced by new institutional formations, which reinforced the 'knowledge of expertise' and dismissed the farmers' traditional practices as obsolete. New spaces for collective action were imposed by the government and manipulated by its representatives and the traditional powerful within the area, which confined those forums to 'safe' 'non-political' issues. Thus, the *state's power vs. tribe's power* relation discussed in Chapter three[6] transformed into a mutual serving alliance within the NJV. The traditional powerful practiced their power within those new spaces and benefited from their services along with their local alliances, while major strategic decisions and policies were being decided upon within political and technocratic networks that existed outside the valley and only few could access. Some of the traditional powerful within the valley had access to those networks which predominantly constituted of members of the Jordanian élite, which left the 'real' practicing farmers outside the circle of negotiation and decision-making. However, conflict between the *conventional privileged and small farmers*[7] remained latent, as issues concerning small farmers were kept off the political agenda by the influence of the conventional powerful. Prevailing gender inequalities, remained latent, and were further reinforced as JVA overlooked the presence of women in the valley as practicing farmers and wage labour and their exclusion from formal collective institutions, thus excluding their needs from decision-making processes. The other poles of conflict, such as *urban vs. rural tensions*, *regional conflict within the JV*, *state responsibility vs. users' disappointment* remained insignificant to the integrated development period. Those took prominence in the following decades during the economic liberalisation period and the change in water sector policy, and are discussed in Chapter eight.

[6] Section III.4, p.91
[7] ibid, p.89

CHAPTER EIGHT

NORTHERN JORDAN VALLEY DURING THE ECONOMIC REFORM ERA

From 'abundance for development' to 'scarcity for sustainability'

Introduction

So far, this thesis has examined the changing contexts for the management of common pool resources in the Jordan Valley in the past century. Even when triggered by broader processes, those changes were articulated within, shaped by and translated into specific influences at the local level. The changing historical socio-political and economic contexts of Jordan were reflected through the changes in the institutional formations in the management of land and water resources in the Jordan Valley (JV). They were articulated within the dynamics of socio-environmental conflict and were shaped by the diverse realities of the people of the valley. During the past two decades Jordan underwent through dire economic challenges, resulting with pressure by international donors to take drastic administrative measures, which affected the water sector. Changes to the water policy of the late 1980s, started to take effect in JV in 1999 in the wake of a pollution incidence in 1998 and the drought year of 1999.

This chapter analyses the dynamics of socio-environmental conflict within the study area in the context of those national changes and their implications at the local level. It introduces the changing contexts, which paved the way for water sector policy changes, and moves on to discuss the impact of those changes on the NJV. In order to explore the possibilities and perceptions of collective action in the face of those changes, the current experience of GTZ in involving the farmers in the distribution of irrigation water in NJV. The decrease in allocation of water irrigation, as part of the recent policy changes influenced agricultural operation variedly according to their size and type of land tenure. Access to irrigation water became further subjected to the dynamics of socio-environmental conflict in NJV, which operated within wider national contexts. Acts of resistance and adaptation were largely of individual nature, which reveals how the historical context of the dynamics of socio-environmental conflict in the JV throughout the past four decades contributed to the loss of faith in collective action and lack of coherent social basis for its success. The findings of this chapter are based on policy papers, TV reports and newspaper archives of the period until this present day and on interviews with government officials, private experts, aid agencies consultants, and agricultural entrepreneurs as well as interviews and observations in the research area.

VIII.1 Jordanian water sector under economic reform policies – *The construction of water scarcity in the context of the new global development discourse*

Jordan's reliance on international finance institutions was reflected in the significant influence the World Bank exerted on the national development plans, in general, and the sectors in which it directly invested, such as the water sector, since the 1950s. The establishment of MoWI marks the beginning of an era for the construction of water shortage as an environmental problem that demands a change in behaviour at the public level. MoWI used the public media to regularly publish reports on current and future water demands and supply figures. The realities of water status in Jordan were mainly blamed on the increased demand due to forced migrations and socio-economic developments. Despite the long history of lack of strategic management, those reports never mentioned this factor as contributing to the water sector problems in Jordan in the public media.

Water awareness campaigns in the 1980s were only directed to domestic users and did not specifically target high-income households, the largest consumers of domestic water in Jordan. Consequently, they failed to achieve significant changes in domestic water use (Interview, USAID consultant to Water Awareness Campaigns, 23 July, 2000). It was water provision problems, such as the rationalisation of water supply and the low-performance old networks, that brought water shortage realities to every Jordanian household. The agricultural sector remained unaffected by those realities and the JV farmers continued to receive surface water through EGC (renamed King Abdullah Canal – KAC). The Eastern desert suburbs of Amman and the desert regions continued to expand irrigated agricultural exploiting shallow aquifers and Jordan's main water reserves. Jordan was still committed to the expansion of agricultural practice, especially as more members of the influential urban élite were interested in expanding their agricultural investments or diversifying into agriculture.

The regional economic recession, which was caused by the launching of the Iran – Iraq war and the fall of oil prices, coupled with the decrease of foreign grants, marks the beginnings of Jordan's economic crisis, which down spiralled into Jordan's inability to meet its scheduled debt payment in 1989 (Brand, 1992). Jordan was forced to adopt policies for structural adjustment in order to reschedule its debt and to receive further financial aid. These changes came at a time when Jordan officially embraced 'sustainable development' working on the first National Environmental Strategy, concluded in 1991. The strategy adopted the conventional definition of the Brundtland report on 'sustainable development' (WCED, 1987). Economic growth remained central to the environmental strategy premise (MMRA&E and IUCN, 1991). In reality, it was the World Bank studies and policy papers, which constructed the definition of sustainable development and the ideology and discourse affecting the dynamics of socio-environmental conflict over water resources in Jordan. This was not a Jordanian specific condition but part of the global controversy over the concepts of 'sustainable development' and how it eventually was assimilated into Third World government policies.

Power, knowledge and discourse played a major role in the 'sustainable development' debate since it was first used in the Brundtland report. A concept such as 'sustainable development' could be subjected to various definitions by different discourse users: ENGOs, states, businesses and multilateral institutions, etc. Due to the control of certain groups over channels of communication and depending on the skill of discourse makers in appealing to audience sentiments in a certain historical, cultural and political context, one discourse could gain more legitimacy and dominance over the others (Hannigan, 1995). Sustainable development as such evolved as a term and is being used as a synonym for terms ranging from 'economic efficiency' to 'ecological sustainability'. Thus, although environmental concerns triumphantly secured a place on the map of development by the birth of the 'sustainable development' term in the Brundtlant report (1987), it was swiftly assimilated by states, businesses and multilateral agencies reproducing their own 'sustainable development' discourse in time for Rio in 1992 (Bryant and Bailey, 1996). Multilateral financial institutions conveniently added the word 'sustainable' in front of its *economic growth* labels, keeping environmental and social concerns sectored separately from 'development' projects. The concept of 'sustainable development', thus, became a product of a process of struggle to reconcile conventionally irreconcilable political actors with different agendas.

Literature on 'sustainable development' tends to point out the peculiar similarity found in the rhetoric of sustainable development used by actors, conventionally on opposite ends of the environmental debate. Under such similarity in vocabulary lie tensions and conflicts over meanings and the means of the process. Peet and Watts (1996) argue that the assimilation of the World Bank of the 'sustainable development' discourse reflects the bank's tendency to recycle old concepts using new words to suit the 'changed political economic and ideological circumstances' (p.18). The surge of 'sustainable development' came at a time when the Third World states' economic performances were being reassessed. As key donor agencies refuse to take responsibility for their own contribution to the current socio-economic and environmental status of Third World states, they employ their own version of sustainable development in pressuring those states to embrace the neo-liberal orthodoxy which calls for the global economic integration through privatisation and opening up economies to foreign investment. The grand narrative of modernisation and development of the twentieth century is now replaced by the new grand narrative of sustainability, which 'provides a societal story-line for justifying change' (Myerson and Rydin, cited in Irwin, 2001, p.44).

The assimilation of the 'sustainable development' debate in the growing context for neo-liberal orthodoxy has transformed the state-centred development of the 1950s into a market-centred development in the 1990s. Despite its rhetoric of *participation*, the development discourse of the 1990s shares the post-colonial development belief in the necessity for the 'Enclosure of the commons' to achieve economic goals and ensure 'environmental protection'. Although development approaches seem to have dropped the belief in mega-projects, they still adopt technocratic and apolitical

approaches to the management of resources, dismissing the role of culture, values, and social and power relations in the construction of PRS in local societies. Faced by enormous socio-economic challenges, after decades of unquestioned development processes, Third World governments are forced to embrace the donors' 'sustainable development' discourse within which their economies are expected to operate.

Because Jordan's water problem was politically connected to the peace process and the impact of its outcome on Jordan's water share in the Jordan River Basin, it was not until 1997 that the water sector review by the World Bank was concluded. The peace treaty with Israel was followed by three years of negotiations to increase Jordan's water share from the *Yarmouk* River floodwater. As Jordan lacked the capacity to store the floodwater during the winter, it reached an agreement with Israel the possibility to store 20MCM of the *Yarmouk* River floodwater in Lake Tiberias, in order to pump it into KAC during the summer season (*Al-Rai*, various reports 1995 – 1998). This increase in available water in the canal was used to increase the quantity of water pumped from the canal to Amman to meet the city's increasing demand for domestic and industrial needs.

Until 1997, the World Bank influence on the water sector remained limited to the reform of water tariff, which was being increased for all consuming sectors including agriculture. However, pressure for the restructuring of the sector continued to be exerted on the Jordanian government in line with the Structural Adjustment directives. Water conservation awareness campaigns, funded by USAID, were improved and directed towards high-income urban households. MoWI continued to enforce its summer water rationing, which was criticised for favouring rich areas instead of poor and distant peri-urban and rural areas (Nims, 1998). Underground water resources continued to be overexploited in the Eastern desert, especially by newcomer agricultural investors from Israel producing crops for Israel food industries; as Jordan was encouraging foreign investment as part of its economic reform policies (Interview, Male Jordanian élite, Former Minister of Water and Irrigation, Owner of entrepreneurial farms in NJV and CJV, 20 June, 2001). The recommendations of the World Bank water sector review were focused on maximising the economic return from available water resources (World Bank, 1997a).

World Bank experts criticised Jordan's high irrigation water consumption, at subsidised prices, in various forums, arguing the agricultural sector in Jordan consumed 70% of Jordan's total water consumption and directly contributed to only 8% of the GDP in 1994. They called for adopting new efficient technologies, criticising traditional irrigation methods resulting with a loss of high-value commodity due to its subsidisation by the government (*Jordan Times*, 21 March, 1996, p.3). Those public statements 'conveniently' ignored to mention other statistical figures, which demonstrated that in the same year 28% of the GDP and 24% of employment was dependent on agriculture (World Bank, 1997a). The World Bank 'concerns' regarding the agricultural sector being a wasteful infeasible

sector were published in English-language newspapers only read by Western-educated Jordanians and foreigners. The economic-centred ideology of the World Bank led the arguments against the agricultural practice and irrigation water, hinting the need to reallocate water to 'the highest value uses' (Ibid). Jordanian private consultants and water experts adopted the World Bank arguments and started calling for the re-allocation of water into economically sensible sectors.

The increasing pressure exerted by the World Bank and bilateral aid agencies such as USAID[1], led to the formulation of Jordan's first National Water Strategy (*Al-Arab Al-Yawm*, 7 July, 1997, p.15). The strategy focused on setting the future direction of investment in and management of water resources, based on the expansion of the private sector's role, cost recovery and the use of latest technologies. The strategy was a culmination of a decade of attempts to construct water scarcity as an environmental problem that can only be solved within the framework of the doctrine of the neo-liberal economic system. The statements of the MoWI started to increasingly use the rhetoric associated with the neo-liberal economic system when discussing Jordan's water status. In public statements, the Minister argued that for Jordan to be integrated within the global economy it needs to reverse the distortions of the market mechanism caused by subsidisation policies, emphasising the ability of the private sector to resolve those problems, relieve the government from its financial burdens and ensure the feasibility of water use (*Al-Rai*, 23 October, 1997, p.27).

VIII.2 Policy changes in the management of water resources in the Jordan Valley – *A national field of conflict*

A major water pollution incidence in the summer of 1998 followed by a drought year in 1999 contributed to the speeding up of the implementation of the principles of Jordan's Water Strategy of 1997. Many of those principles had direct effects on JVA. The pollution problem was mainly caused by the incompetence of the long un-maintained water treatment plant, which provided Amman with its municipal water, to deal with the highly organic water received from Lake Tiberias. The severity of the pollution incidence was augmented by the lack of transparency and immediate action by the government. The residents of Amman noticed a change in drinking water quality: foul smell, discolouration and bad taste. The MoWI insisted on denying the presence of any harmful pollutants for the first two weeks. While official newspapers stood by the government claims, independent and newspapers challenged the administration's claims and questioned the minister's integrity.

Although the rich residents of Amman were affected by the incidence, it was not comparable to the extent of the suffering of lower middle income and poor households. Once the government admitted the presence of 'non-life-threatening' pollutants in the water, the Water Authority stopped the

[1] US loans and grants to Jordan constitutes more than half of Jordan's total annual received aid (*Middle East Times*, 2002). Since 1953, $1.2b of USAID total $2b contributions to Jordan were granted to JVA (Forward and JVA, 2000).

provision of domestic water until they could solve the problem, which took another two months. This resulted with the emergence of a water black market as water vendors tried to maximise their profits from water trade. While this presented a nuisance to the affluent Ammanites, it was an everyday agony for those who could not afford it. The pollution incidence became high profile issue for two main reasons: First, because it affected the rich and powerful residents of Western Amman, despite the fact that the poor were the hardest hit ((Interview, *Al-Arab Al-Yawm* Journalist, 15 October, 2002); and second, it gave justification for those who were against the peace treaty with Israel to question the agreement as the problem coincided with the start of pumping water from Lake Tiberias (Nims, 1998).

The pollution incidence served in constructing water as the top environmental priority in Jordan, as it brought home the realities of looming water scarcity and its influence on peoples' lives regardless of income. Moreover, it resulted in undermining the consumers' confidence in the government's ability to deliver services to users and escalating their bitterness towards its lack of transparency and accountability towards its 'customers'. The Minister of Water and Irrigation resigned under political and public pressure and nine public officials were prosecuted for negligence. Although the resignation of the Minister contributed to improving the establishment's willingness to make government officials accountable for their mistakes, the incident shed the light on broader strategic water policy issues, questioning political will, long history of mismanagement tradition and accumulating administrative mistakes rather than perceiving it as a one-off technical problem (Various columnists, *Al-Arab Al-Yawm* and *Al-Rai*, August – October, 1998)

The incidence provided grounds for contesting claims over water policies and became an opportunity for local and foreign experts to push for the World Bank rhetoric. The changes affecting the Jordan Valley, which started to take shape in 1999, stemmed from two main strategic issues adopted by the national water strategy: first, the need to improve public sector efficiency through private sector participation (Forward and JVA, 2000); and second, shifting funding from irrigated agriculture to feasible sectors and to emerging new economies such as information technology and tourism (ibid). These policy directives were translated in varying forms between 1999 and 2002. At the institutional level, the main change was the amendment to JVA Law to increase the efficiency of the authority, diversify its development efforts and encourage large agricultural investments in the valley (Law No.30 of 2001) At the operation level, JVA started to decrease the amount of water allocated for irrigation from KAC, as it increased the amount pumped up to Jordan's urban centres.

The main aims of the amendment to JVA law (No.30 of 2001) were to transform JVA into a business entity and encourage 'water efficient' large investment operations by opening up the land market to unlimited external private investment. Initially, Jordan Valley MPs rejected the changes in fear of their potential impact on the heavy indebted small farmers, who suffered annual losses due to the

recent closure of the Gulf markets after the pollution incidence and the long history of lack of proper agricultural production and marketing strategies. Thus, the amendment included an article banning the sale of land for debt closure for the first five years of enacting the law (Article No.13-L, ibid). The statutes of the law also expanded the mandate of JVA and its role in industrial and tourist developments along the Jordan Rift Valley (Article No.2, ibid). The law did not specifically refer to the plans to shift government funding from irrigated agriculture, nor shifting water allocation to other economic sectors, but it gave JVA secretary general the right to issue regulations to organise and control agricultural activities (Article 22.j, ibid). The increased mandate of the JVA over irrigation water resources called for stricter measures to deal with illegal access to water resources, which were expected to increase once such control measures were implemented. The law gave the JVA employees court power to report violations and carry out sentences. Although such provision emphasized the increased control of JVA over water resources, the law itself allowed the possibility of privatising any aspect of the management and development of water resources in the Valley.

The decrease in the allocated water irrigation started as a temporary measure in the summer of 1999, which was declared a drought year. This presented MoWI with a new challenge as it needed to regain the confidence of its urban customers following the pollution incidence. As annual water rationing was expected to be applied again, the government needed to ensure that the water allocation to urban centres would not fall below the annual shares despite the drought. This led to MoWI's decision to provide additional water resources for municipal and industrial use, by re-opening artesian water wells in the surroundings of Amman and drilling new ones towards the Eastern desert (*Jordan Times*, 17 May and 31 May, 1999). Despite the decrease in available water in KAC and its storage dams, the government decided to increase the amount of diverted water diverted to 45MCM (ibid). Consequently, JVA reduced the water allocated for the summer crops in the valley by: 30% for citrus orchids and 50% for vegetable and fruits (*Jordan Times*, 31 May, 1999, p.3). Although rainfall in the following three years improved, more cuts in irrigation water were enforced: Summer crops (tomato, aubergine, okra and courgette) were banned, while irrigation water to fruit trees was reduced by 50%. When irrigation water supply resumed in September 2001, it was reduced by 50%; and in winter 2002 it was only decreased to 35% (Interview, Male Director, JVA, NJV directorate, 12 May, 2002). Although presented by JVA as temporary measures, most farmers and private experts believe that this practice is in preparation for a permanent reduction in irrigation water allocation in the JV.

The World Bank development discourse and its specific rhetoric on the water sector in Jordan was the source which most private and public experts, agricultural entrepreneurs and even urban consumers refer to in their contributions to the water sector debate revealing the conflict between the *conventional privileged and small farmers*[2]. Jordanian agricultural entrepreneurs and the World Bank consultants share the claim that small agricultural practices and their lagging irrigation technologies

[2] Chapter Three, section III.4, p.89.

are obstacles to the new development process (Interview, Male, Jordanian élite, Chairman of the Jordan Exporters and Producers Association, and Managing partner of large entrepreneurial farm in CJV, 18 July, 2001). As Jordan finalises the agreement to enter WTO, agricultural entrepreneurs believe that traditional practices for traditional markets have to phase out. 'We need new blood: new technologies. This is not just about agricultural practice: This is WTO! This is Globalisation! If you are not competitive, forget it' (ibid). As Jordanian markets open to products of well-established markets, the lagging agricultural sector will face fierce competition, which will increase as the Jordanian agricultural sector is forced to make expensive concessions and lose the long enjoyed government subsidies. Experts argue that it is only by opening the agriculture and water sector to entrepreneurial and external investment that irrigation agriculture will be competitive within the global economy (Interview, Male, Jordanian private consultant to USAID & JVA, 3 May, 2001).

The voices of small farmers in the national debate on irrigated agricultural is nowhere to be heard, but agricultural experts of the 'old-guard' oppose the new tendencies insisting on the need for achieving food security (*Al-Rai*, 24 February, 2000, p.20). Those are being faced by the ridicule of Western educated experts who adopted the Second World Water Forum vision statement for new definition of food security in a globalised context: 'importing food security' by 'importing "virtual" water... and with the money we earn in commerce, industry and tourism, we will buy food' (Interview with Jordanian Expert, *Jordan Times*, 21st March, 2000). However, some foreign experts working as private consultants for bilateral aid agencies still question the wisdom of shifting the development in the Jordan Valley away from agricultural. A private consultant working on water policies, questioned the approaches adopted by Jordan under the guidance of the World Bank and USAID arguing that the Jordan Valley is becoming the victim of WTO and foreign investment promotion policy: 'I understand the need for industrialisation and urban development, but JV should not be the area designated for those purposes! It is an area, which has irrigation water and fertile soil: best appropriate for agricultural activity' (Interview, Male, American private consultant for MoWI and USAID, 3 June, 2001).

The aftermath of the pollution incidence of 1998, also brought to the front the *urban vs. rural tensions*[3] in the water debate. The claims of affluent urban dwellers for larger shares in water supply increased and contributed to the debate on the water sector. Western educated water users and experts, writing in English-language newspapers, started to question the wisdom of providing irrigation water to the Jordan Valley. On August 4th, 1999, an urban dweller wrote in the *Jordan Times*, 'the longer-term solution [regarding the water problem] rests with facing the glaring ugly facts and tackling the real culprit in Jordan's obscene and chronic water shortages: The Jordan Valley's agricultural farms.' He quoted figures of the Economic Intelligence Unit Jordan country profile undermining the agricultural sector contribution to GDP. As the World Bank claims-making, the figures overlooked statistical

[3] ibid, p.92.

realities, which reinforced agricultural contribution to other related sectors, which were distorted by the closure of regional markets due to the exaggeration of the pollution incidence[4].

Agricultural entrepreneurs investing in the Jordan Valley oppose this argument against agriculture in the JV. While they agree that small farmers are the 'wasters' of irrigation water, they believe that the Jordan Valley should not be the scapegoat of new water policies. They argue that, the greater part of irrigation water consumption is not consumed by the surface water which the JV utilises for its historically irrigated agriculture, but rather the agricultural practices in the Eastern Heights and the desert plateau, which are consuming high quality shallow aquifers and deep non-renewable aquifers for newly irrigated agricultural operations (Interview, Male, Jordanian élite, Managing partner of large entrepreneurial farm in CJV, 18 July, 2001). A former Minister of Water and Irrigation, who also happens to own large agricultural operations in the NJV and CJV argues that diverting KAC water to Amman is costly due to the energy needed for elevated pumping in addition to the expensive treatment needed to make the water potable: 'It would be cheaper to provide Amman with potable water from the nearby artesian wells, which is being wasted on irrigated agriculture' (Interview, 20 June, 2001).

Indeed, scientific figures can be selectively used to back up certain arguments and undermine others. In all the reports published in the Jordanian newspapers for public consumption, the high consumption of irrigation water by agricultural practice was always lumped together in one total figure, concealing the reality of the Jordan Valley's share in that consumption. The available water in the Jordan valley was 258MCM in 1998/9 of which 42MCM was pumped for municipal and industrial use (MoWI, 1999). This means that the water consumption of the Jordan Valley does not exceed 24% of the total 900MCM water consumption in Jordan. The increase in agricultural consumption of national water supply lies in the transformation of rainfed land into irrigated land. But since the Jordan Valley is Jordan's main fertile land while the remaining practices are dispersed along the desert plateau, the JV is being perceived as the largest consumer and hence the first to pay the price for the shift from agricultural practice. Other factors contribute to the inclination of the Jordanian government to start off the drastic changes in the Jordan Valley: first, the existence of JVA as an institution with a strong presence and control over surface water resources in comparison to the fragmented control over underground water resources makes it easier for the government to start the drastic changes; second, underground water resources are being exploited by the influential agricultural entrepreneurs or traditionally powerful Bedouin tribes, in addition to the new foreign investors who were given licenses to exploit water resources in the desert plateau and third, the presence of infrastructure to divert water from KAC to Amman and the lack of large funding to install infrastructure to draw water from the desert to Amman, which is mainly attributed to

[4] The pollution occurrence only affected Amman and 0.05% of the valley's agricultural land (*Al-Arab Al-Yawm*, 6 January, 2000).

accumulated bad management and funding decisions by successive administrations and donor-agencies.

VIII.3 Agricultural practice and access to irrigation water in the NJV – *Thirty years onwards*

Before discussing the dynamics of socio-environmental conflict in NJV in the context of policy changes, it is important to revisit those dynamics in relation to access to landholding and to irrigation water during the period preceding those changes. As illustrated in Chapter five[5], the *Ghzawis* ownership was substantial in the research area. Landholders in NJV included: *Ghzawi*, *Zainati*, peasants of *Ghawarneh* origins, peasants of slave ancestry, Palestinian refugees, residents of the *shafa* – mountainside towns – and outsiders and urban dwellers of both Jordanian and Palestinian origins. Peasants regardless of their origins and *Zainatis* had the lowest percentage of landholding in the entire region. Ninety percent of the Palestinian refugees' holdings were attributed to *Turkman* ownership in *Wadi Arrayyan.* The non-*Turkman* Palestinian refugees' ownership in the entire research area did not exceed 1.43%. The largest percentage of the land was actually held by owners from outside the area: i.e, the *shafa* residents and urban dwellers, totalling 36.5% of the entire holdings in the region.

Table VIII.3: Different groups holding (%) within the research DAs in 1962 and 1996

	1962	1996
Ghzawi	29.83	13.75
Zainati	6.75	2.26
Peasants-S	5.24	9.15
Peasants-G	6.45	8.81
Refugees	14.02	13.34
Skkour	0.62	0.74
Turkman	12.59	10.80
Other	0.81	1.80
Shafa residents	24.63	29.48
Outsiders and urban dwellers	11.87	18.02
Unidentified	1.21	5.19
	100%	100%

Source: Based on MoWI and JVA data, 2001

The manipulation of and exclusion from access to land in the project were discussed in Chapters six and seven. Figures to demonstrate the resulting land ownership patterns in the research region only became available in 1996, when JVA computerised its land ownership data. The new figures presented here help to explain how the current landholding patterns influenced policy changes, which have different impacts on the Jordan Valley residents depending on the different form of access to land as a material practice among the other 'moments' of social process. Table VIII.3 demonstrates that although the *Ghzawis* holdings were reduced by more than 50%, the increase in the peasants' holdings did not significantly change their total holding in the area. Moreover, the outsiders' holdings increased, while that of Palestinian refugees dropped almost 1% from what it was in 1962, with the *Turkman* remaining the largest Palestinian landholders. The *Ghzawis* holdings remained relatively the largest as each of sons of the original landowners held seven agricultural units under their tenure, besides their properties within NJV outside the research area. Urban dwellers landholdings increased and are also held by a handful of affluent individuals, while the holdings of the peasants and refugees remained dispersed in small landholdings (One unit

[5] Table V.2, p.139

or less/farmer). The ownership of *Shafa* residents vary between one unit, held by one owner, to three or four units held by the inheritors of deceased large landowner.

Interviews with peasant landowners conducted during the fieldwork in 2001 revealed that the size of the agricultural operation of practicing small farmers decreased over the years as the land was inherited by their descendants, who were not allowed to sell the land and were not willing to work together due to sibling rivalry. Some inheritors preferred to lease out the land to small entrepreneurial farmers or Palestinian practicing farmers. Further south towards the central valley, some Egyptian and Pakistani labour that have long lived in Jordan moved away from wage labour to rent the land from peasant landholders. Many peasant landholders preferred the guarantee of the lease pay rather than to work and suffer all the year only to find themselves in more debt by the end of the season (Various Interviews, peasant landowners, *Sheikh Hussein* and *Mashare'*, May – August, 2001). The demand for leasing agricultural units provided the small peasant landowners with a fixed source of income under dire economic conditions (Interview, male peasant of slave ancestry, *Sheikh Hussein*, 2 June, 2001). They also supplemented their household income through the work of the female members of the household as occasional day labour during harvest for JD2/per six hours day and their sons' work in either formal employment or agricultural services, such as transport (Interviews with three female wage labours, peasants of slave ancestry, *Sheikh Hussein*, 24 – 25 May, 2001). For the landless peasants, working for other agricultural establishments, especially entrepreneurial practices is their main source of income (Various interviews, eight female homemakers[6], wives of landless peasants of various origins, *Sheikh Hussein* and *Mashare'*, May – June, 2001).

Interviewed Palestinian refugee farmers revealed their insistence on agriculture as a living practice. They seem to be able to make ends meet as they work as a family in the land while supplementing their income from formal employment which their educated children are enrolled in (Various visits to Palestinian refugees households in *Sheikh Hussein*, *Mashare'* and *Wadi Arrayyan*, Summers 2002 & 2001). To them, agricultural practice remains a way of life, protecting them from dire need, despite lack of cash income. They are satisfied to eat vegetable stews from their own produce (Visit to a Palestinian refugee family in their farm, 17 June, 2001). As for small entrepreneurial farmers, the agricultural practice was an income supplementary practice. Most of those decided to invest in agriculture upon returning to Jordan from the Gulf countries, where they saved enough to sustain a small high-value agricultural operation, such as nurseries or cherry tomato and strawberry crops, employing advanced irrigation and agricultural technologies (Interview, male small entrepreneurial farmer, *Turkman*, 25 June, 2001). Although there are no cases of land lease to Egyptian or Pakistani workers in NJV, it is worth mentioning that Egyptian- and Pakistani-operated farms got by through minimum expenditure on the operation and managed to save enough to send back home through surviving under dire living conditions.

[6] Note that those women might work as occasional wage labour during the harvest season.

Women's participation in the agricultural sector is mainly confined to peasant women working as wage labour, if their fathers did not own land. Otherwise they would work in their fathers or husbands land. Once the father died, most women became silent partners, while their brothers managed the land and paid them their share in the season's produce, if any (Interviews with several female *Ghawarneh* peasant, partners in inherited land, May – July, 2001). Many sisters would still give up their shares to their brothers, sometimes for no return and others in return of an estimated value of their share (Interview, male peasant of slave ancestry, *Sheikh Hussein*, 5 May, 2001). Most widows would also leave the management of the land to their sons. In the absence of male relatives, peasant women leased the land to practicing farmers. At the time of the fieldwork, there were only a handful of practicing female farmers in NJV; some started in small shares within agricultural units to supplement or fully provide for the household in cases of husbands retirement, illness or death (Interviews, five female Palestinian refugees farmers, *Mashare'* and *Wadi Arrayyan*, May – July, 2001). For peasant farmers, it is generally unacceptable that a woman would work in her land, if she had an able husband, brother or son. But female Palestinian refugees found that cultivating a small rented piece of land to provide for their family is a better option than working as wage labour, which they felt was demeaning and did not provide enough cash to sustain their families (Interviews, female Palestinian refugee farmer, *Mashare'*, 6 May, 2001; and female *As-Saqer* farmer, *Mashare'*, 24 July, 2001).

As small agricultural units continued to operate mostly through lease contracts side by side with larger operations, the social relations, which used to operate through the complicated value-ridden power relations between the peasants, sharecroppers and landholders, started to collapse in the 1970s and was completely dismantled by the 1990s. Wage labour, which substituted the *harrathein* relation, did not operate through the web of tribes, clans and sub-clans hierarchies that dominated the *harrathein* – landowner relations prior to the EGC project. Sharecropping, which was a form of partnership, demanded a level of trust and alliance between the landowner and the farmer in order to be set up. Land leases led to the liberation of the relation between the farmers and landowners. It guaranteed for the landowner to receive the full rent of his land, while the farmer enjoyed full control over the operation throughout the year. The social cohesion, *not harmony*, which ruled those relations *vis-à-vis* the prevailing material practices and consequently the distribution of water resources between farmers along shared water flow, was lost within the three decades following the construction of the new water network and the redistribution of agricultural units. By the 1990s, farmers, whether landowners or leaseholders, no longer identified with their neighbours, with whom they share a JVA-managed water canal. Leaseholders could change every year; landowners could lease their land to investors even from urban centres; and large landowners fenced their agricultural units locking out 'intruders', thus, further magnifying the individualisation process initiated by the creation of state bureaucracies as the interface through which farmers interacted with their own environment.

As this form of social disintegration took place in the land/irrigation field, social relations crystallised into sub-groups more or less following the social hierarchies, which prevailed in the valley prior to the project. The interrelation between those sub-groups was no longer reinforced through their interaction in land relations and irrigation systems. The people of the Jordan Valley have no word to refer to themselves as one collective group. Although the area is called *Ghor* in Arabic, the word *Ghawarneh* – a derivative from *Ghor* – is used to refer to peasants who originally resided in the area and those who are claimed to be of slave origins. In private settings, most of the *Ghawarneh* insist on making the distinction by referring to those peasants either by their clans name or simply as *'abeid* – slaves, despite those peasants rejection of such suggestion: '...being exploited by the *Ghzawis* in the past did not, and does not, make us their *slaves*!' (Interview, male peasant of slave ancestry, *Sheikh Hussein*, 4 June, 2001). The *Ghzawis* are still considered of highest social status and are referred to as *Ahrar* – free (Interview, male Journalist and farmer, *Ghawarneh* peasant, *Sheikh Hussein*, 29 April, 2001); a term which also includes other clans who came to the area from other Jordanian regions.

The Palestinian refugees are perceived as a separate social group, which the valley's residents refer to as the 'returnees' (Interview, male *Ghawarneh* peasant, Mayor of *Mashare'*, 30 April, 2001). The valley's residents argue that the expression is a good wish for the Palestinians to return to their land (ibid). The identity of Palestinian refugees is still controversial because some have already integrated into the Jordanian society and others are still living under refugee status. This results with various attitudes and reactions. If a Palestinian holding the Jordanian citizenship says s/he is Palestinian they imply 'ingratitude' and unwillingness to integrate fully within the Jordanian society. At the same time, it is difficult for them to claim to be Jordanian because the family name gives away the person's origins. The majority of Palestinians are still considered refugees but the sensitivity of the Jordanian-Palestinian relations makes the reference to ones origin a provoking issue. Some Jordanians believe that using the term Palestinian or refugee might reinforce the rift between them. Interviewed Jordanians tended to use different expressions such as from the 'west of the River' or refer to the city they are from such as: *Rammallah, Jerusalem, Baisan, Yafa, etc.* The Palestinian refugees attribute themselves to their clans such as *As-Saqer* or *Turkman.*

As the *Ghzawis* power was being exercised in new fields, sometimes external to the everyday lives of the valley's residents, the level and intensity of alliances with the *Ghzawis* started to decrease. In town board and parliament elections, new and temporary alliances were formed to out win the *Ghzawis* in areas of representation, which succeeded in many occasions. The mayor of *Sheikh Hussein* during the fieldwork was a *Ghzawi*, while that of *Al-Mashare'* was a *Ghawarneh* peasant. A Jordanian of Palestinian origin represents the entire NJV in the Parliament. Many residents in the valley believe that the establishment of state agencies in the valley decreased the need to be unified and protected by the

Ghzawis, but they still need their access to necessary power networks in order for farmers to survive in these new contexts.

While social group differentiations were mostly latent during the 1970s and early 1980s due to the prevailing relative agricultural boom, the growing challenges of the sector in the mid 1990s contributed to the proliferation of the conflict within the valley over water resources through the perception of those groups of themselves and the 'other'. The farmers of NJV mark the turning point in the control of water resources as the period when JVA switched the water network from open canals to underground pressurised system in 1995 and introduced a new water distribution schedule with shorter supply hours (Interview, Male Palestinian refugee, *Sheikh Hussein*, 13 June, 2001). Water became delivered through a pipeline with a valve, which is locked in underground opening in each land unit. Once a line was opened from the main source, ditch riders would go to the units, whose turn was due for water supply, unlock the door to the pit and open the unit's supply valve (Interview, Male *Ghawarneh* peasant, farmer and ditch rider, *Mashare'*, 30 May, 2001).

The shift to pressurised water network decreased the water flow, as it brought the water to the farms in a manner unfamiliar to the farmers. All interviewed practicing farmers, regardless of the size of enterprise, origin or gender, referred to the water supply through the pressurised water as 'tap water', emphasising their dissatisfaction with the flow of water and the manner through which they received it. The shift was accompanied by a campaign to encourage the use of drip irrigation to be able to make the best of the new system (Interview, Male JVA employee in NJV directorate, *Ghawarneh* peasants, 13 May, 2001). Large landowners and entrepreneurial farmers had already installed those systems. Only those farmers who could afford the installation of the new systems or could access credit lines managed to invest in drip irrigation (Several interviews, farmers of various origins, *Sheikh Hussein*, *Mashare'*, and *Wadi Arrayyan*, May – August, 2001). Not all land renters were prepared to make such investment because of the instability of the market. Moreover, those who did not have long-term leases were not too keen on the hustle of dismantling, transporting and reinstalling the system every year or two (Interview, Male Palestinian refugee, *Sheikh Hussein*, 13 June, 2001).

To the JVA, the shift to a pressurised system was believed to increase the efficient use of irrigation water through the minimisation of water loss through evaporation and the control of illegal access, which was easier when the water ran through open canals (Interview, Male, Director, JVA, NJV directorate, 12 May, 2002). Although a technically sensible argument, as the switch significantly reduced water loss through evaporation, the decrease in water supply led to increased undetected occurrences of illegal access to water resources. Bribery of ditch riders and other officials by affluent landowners became widespread in order to access extended water supply (ibid). Poor farmers tried other methods to increase their access to irrigation water; either through underground illegal connections to the network or by breaking into water valve pit and opening the supply for short

intervals when the main line was opened (Several interviews, small practicing farmers of various origins and gender, *Sheikh Hussein*, *Mashare'* and *Wadi Arrayyan*, May – August, 2001). Neither corruption nor water thefts were easy to minimise due to the lack of transparency in water distribution and low salaries of government employees (GTZ, 2002) – and the decrease in irrigation water supply. Although the water pressure would drop when illegal access to water occurred in a certain tertiary line, it was not possible to expose the unit behind it because the pipes were buried underground (Several interviews, small practicing farmers of various origins and gender, *Sheikh Hussein*, *Mashare'* and *Wadi Arrayyan*, May – August, 2001). Thus, adversely affected farmers, by the drop of pressure, could not pinpoint those who caused it and consequently could not direct their dissatisfaction to specific farmers, which minimised possibilities of open conflict.

The fieldwork in 2001 revealed that despite the shift to the pressurised system in 1995, the farmers of the Jordan Valley did not suffer drastic losses in their practices. This was partly due to the ability of many farmers to access water illegally in addition to other farmers ability to access extra irrigation water by pumping it from underground water drainage streams going through their land or surface streams from side valleys, which were still unclaimed by JVA despite being legally under its jurisdiction. The JVA chose to turn a blind eye to those activities because claiming those resources would not drastically increase the amount of water supply in the Valley to justify the costs of the infrastructure for the reclamation (Interview, Male, Director, JVA, NJV directorate, 12 May, 2002). On the other hand, allowing the farmers to utilise the water helped to pacify the resistance to the new changes in the water supply system. In some cases, those water sources ran through a group of agricultural units and were utilised by up to 20 farmers (Interviews with three male practicing farmers in *Wadi Arrayyan* who shared a water source with another 17 farmers, 3 June and 24 July, 2001).

Regardless of the make-up of the farmers sharing the water resource, they were able to reach agreements on a schedule for the distribution of irrigation water from the source. They would agree in the beginning of the season on the water pumping schedule. According to those farmers, they did not have significant problems, because the stream was only a supplementary source of irrigation water (ibid). Once they agreed on the schedule, they almost never needed to meet again. Each farmer would start pumping to his or her land on the time agreed upon and would switch it off at the allocated time as well. If the farmer noticed that the flow was weak on his turn, he or she would go to the farmer who had the previous turn and ask him/her to switch of his/her pump (Interview, female *As-Saqer* farmer, shared a run-off water stream in *Mashare'*, 24 July, 2001). This form of collective action was possible to be carried out because it was similar to that practiced before the construction of EGC. The basis of the water supply was the flow of the running stream, which formed an ecological cluster of neighbouring farms where farmers were able to know who is sharing the stream with them, who comes before them in the turn and who comes after them following the slope of the

land. Those who were sharing the stream, and when, were not obscured by an underground network that supplied water in a non-sequential manner.

Apart from those exceptional cases, the shift to underground pressurised water system obscured the farmers' relation with surface irrigation water, which depended on the rain season. The farmers became more sceptical towards the institution responsible for water distribution. Available water quantities were reduced to published figures in the newspapers. The lack of confidence in JVA and its employees was further aggravated by the lack of transparency in the distribution of irrigation water. Access to irrigation water became a source of speculation, which was directed by the different farmers' perception of the 'other's' accessibility to institutional contexts. Small peasant farmers believed that the decision of who gets irrigation water was taken at levels outside their locality where the influence of large landowners and influential entrepreneurs is strong and undeniable by even the local directorate of JVA (Several interviews with male peasant farmers of various origins, *Sheikh Hussein* and *Mashare'*, May – August, 2001). This to the peasant farmers created a form of overt conflict towards the institution responsible for the distribution of irrigation water, which concealed a deeper, but latent conflict, with those who have been traditionally powerful and continued to enjoy new forms of power despite the alleged equality which their great project of the 1960s was supposed to have achieved. Those feelings were the main justification behind the farmers' illegal access to irrigation water (ibid). The theft used to affect their fellow farmers who shared the tertiary line with them, despite not being the ones enjoying open access to water. But as mentioned earlier, the lack of social cohesion along the lines contributed to the lack of sympathy between the farmers in the region.

VIII.4 Dynamics of socio-environmental conflict in the NJV under conditions of scarcity

The ability to get away with illegal access to irrigation water became more limited in 1998, when JVA installed electric meters on agricultural units' supply valve (Interview, Male, Director, JVA, NJV directorate, 12 May, 2002). This served to increase the control of JVA over water resources in two manners: first, the precise billing according to amount of consumption as registered by the meter and second, discovering thefts through the difference between the real consumption and the allowed consumptions according to the set duration of supply and water flow (ibid). This resulted in the increase of JVA citations of illegal access to water by farmers. Illegal access also acquired new forms such as the tampering with the water meter or attempts to increase the water flow, which used to decrease following the drop of pressure due to illegal access (ibid). All farmers, including educated ones, argued that the meter was gas sensitive, registering consumption even when there was no water supply because of the air pressure in the network created by the intermittent supply (Several interviews with farmers of various origins and gender and with *Ghzawi* landowners, *Sheikh Hussein*, *Mashare'* and *Wadi Arrayyan*, May – August, 2001). The scarcity of water created by the diversion of KAC water to Amman coupled with 'a bloated bureaucracy with low government salaries, fostered bribery and corruption' (GTZ, 2002) created a vicious circle through which the farmers' confidence

in JVA deteriorated and their sense of injustice increased; consequently increasing illegal access to irrigation water.

The ban of summer crops in 2001 and the reduction of water irrigation for the remainder of the year, contributed to enticing the conflict over water resources and unveiling latent conflicts. The changes had varying effects on the different groups in living and/or practicing agriculture in NJV in specific and the Jordan Valley in general, which led to various forms of reactions ranging between acts of resistance and acts of adaptation. The variation of the impacts and reactions were embedded in the dynamics of the 'moments' of the prevailing social process; such as material practices as categorised in Chapter Seven in relation to the agricultural practice, access to influential social and power relations, creating a dominant discourse through access to channels of communication, or the increasing influence of values and beliefs as many felt they were losing control over their aspects of life.

For entrepreneurial large landowners, whether absentee or original landholders, the banning of summer crops was not of relevance to them because their land was mostly planted with trees, which were allocated enough water to survive. However, the reduction of the water supply would have had adverse impact on their crops (Interview, Male, *Ghzawi* large landowner, Amman, 10 April, 2001) and they tried to find ways to increase their access to water to avoid such grievances. Some tried to use their influence at high ministerial levels to increase water supply to their units (Interview, Male, Director, JVA, NJV directorate, 12 May, 2002), while others opted for 'officially illegal' sources of irrigation water, which demanded high capital to implement in addition to power and influence to ensure that the government would turn a blind eye to their actions (Interview, Male, *Ghzawi* large landowner who drilled an illegal underground water well within his farm, *Mashare'*, 30 May, 2001). Although most of those landowners do not admit that they are getting special treatment regarding access to irrigation water, they insist on their right to irrigation water within the Valley (Several Interviews, original and entrepreneurial large landowners, Amman and NJV, April and May, 2001).

Original landowners argue that JV water was originally their right, which the government confiscated with the land in the past on the basis that they would be given irrigated and serviced land in return; a right which the government is now withdrawing from them: 'Water is *not a privilege*! They are giving us *our* own water' is the argument of the *Ghzawis* influential members (Interview, eldest living son of *Emir Ghzawi, Sheikh Hussein*, 15 June, 2001). Similar to Leach *et al* (1999) example[7] of game hunters in *Makambati* reserve, who justified their illegal practice by fact that it was their customary rights; in their demand for water, the *Ghzawis* adopted the rhetoric of *entitlement* to argue their prior right to water, as they 'sacrificed' their land for the development of Jordan. The decrease in water allocation for the JV, thus, contributed to bringing to the surface the latent resentment which the *Ghzawis* still

[7] Chapter One, p.43

held towards the government for decreasing their land holdings, despite the fact that many of the *Ghzawis* work in JVA, some in high ranks. Almost all of them enjoyed special treatment from small JVA employees because of influence and/or corruption.

Entrepreneurial original and absentee large landowners argue that they have already invested high capital in land development assuming that their water allocation would not be decreased (Interview, Male Jordanian élite, Owner of entrepreneurial farms in NJV and CJV, 20 June, 2001). They use the rhetoric of *entitlement* of the entire valley to its own waters rather than pumping it to urban areas. Most of those landowners live in urban areas and their objection is not against urban area's right to water *per se*, but against allowing the exploitation of high quality water in the suburbs of Amman and the desert plateau for competing agricultural practices, while stripping the valley, Jordan's most fertile land, from its own water. For entrepreneurial absentee large landowners, small farmers are nuisance and the cause behind the changes enforced on the entire farming community in the Jordan Valley. They consider them incompetent, lacking in technical and financial resources and an obstacle to their expansion of entrepreneurial practices (Interview, Male, Jordanian élite, Managing partner of large entrepreneurial farm in CJV, 18 July, 2001). Current and potential entrepreneurial investors in the Jordan Valley played a major role in pushing for opening the Jordan Valley to private investment using water scarcity and the ability of large operations to invest in efficient irrigation technologies to back up their arguments.

The ability of the entrepreneurial large farmers to influence government policy can be attributed to two aspects: first, their access as individuals to various decision-making circles through their social relations or as members of the urban élite, and second, their ability to exercise pressure on the government through their collective efforts as an organised group – Jordan Exporters and Producers Association for Fruit and Vegetables (JEPA), established in 1994. As argued in Chapter Two, collective action does not only arise to resist change, but also as an inductive of change. Strong groups such as entrepreneurs tend to develop forms of association to maximise benefits within capitalist neo-liberal systems. Through those collectivities, large entrepreneurial 'farmers' created for themselves a voice in decision-making circles and started influencing processes of change, by adopting the new dominant discourse of development. All members of JEPA share the same vision of how agricultural practice needs to be in the Jordan Valley. Their shared values and beliefs united them despite the competitiveness between them. Consequently JEPA became the agricultural entrepreneurs' official representative to the World Bank and the Economic Consultative Council (ECC) to the King. The chairman and many other board members of JEPA became members of the ECC (Interview, Male academic agricultural expert, member of ECC, 28 November, 2002), thus, securing a place for irrigated agricultural production in Jordan's future development plans; based on their vision of *entrepreneurial* irrigated agricultural.

Although the Jordan Valley Farmers Association was represented in the ECC, it was only represented through its president who is a large landowner and a high ranking official in JVA. The voices of the JV's wide spectrum of small landowners, small practicing farmers, practicing farmers on large plots, small entrepreneurial farmers, and indeed female farmers were not represented in those circles as decisions regarding their lives were being taken. Before discussing the assumptions of policy makers regarding the JV farmers and how they could impact them, it is important to carry on with discussing adaptation and resistance strategies of those farmers in reaction to the decrease in water allocation and the banning of summer crops. The effects of those changes varied on the farmers depending on whether they owned the land they cultivated or they rented it. For those who owned the land it affected them differently depending on whether they had trees in their land or not.

As mentioned in Chapter six[8], although peasants were mostly sold land officially deemed not cultivable or irrigated, they were supplied with irrigation water during the agricultural intensification period. As the government started to decrease the irrigation water allocation to the Jordan Valley, JVA decided to enact the regulations, which governed those lands. So the parts of the land, which were not classified irrigated were denied irrigation water, while the parts, which were considered irrigated – usually not exceeding one fourth or one third of the land – were supplied the reduced amounts of water (Interview, Male, Director, JVA, NJV directorate, 12 May, 2002). In comparison to those who suffered 30% loss of water supply, those farmers in effect were denied at least 80% of their regular water supply. To those peasants, there was no logic to JVA's action; in their minds' eye, trees should never be denied irrigation water (Interview, male, peasant of slave ancestry, *Sheikh Hussein*, 11 July, 2001). They went to the local JVA directorate and used rhetoric of *endangerment* to persuade the director to increase their water share (Observation, several visits to JVA offices in NJV directorate, May – August, 2001). The director used his power to temporarily increase their share, at his own discretion (ibid).

The loss of access to irrigation water, led many farmers, especially of slave origins, to reveal their latent resentment towards the *Ghzawis*. As by the regulations the amount of the *Ghzawis* loss was fractional in comparison to that of those peasants (Visits to various peasants of slave origins households, *Sheikh Hussein*, June, 2001). The potential harm to their practice was reduced by their use of expensive technologies, some of which included the digging of underground water wells, which the government did not take any action against until the writing of this thesis. As the peasants watched their crops wither, their bitterness increased towards the *Ghzawis* (ibid). This represented those farmers enough justification to attempt illegal access to irrigation water, which in most of the times was cited and incurred on them the extra cost of the fines to avoid the disruption of water supply to their lands (Interview, male, peasant of slave ancestry, *Sheikh Hussein*, 11 July, 2001). Peasant landowners, whose land classification was of irrigated category, did not suffer as much.

[8] Section VI.4, p.169

Those whose land was partially planted with trees made use of the allocated water to continue planting summer crops and distributed the supplied water between their trees and their summer crops (Interview, male, peasant of slave ancestry, *Sheikh Hussein*, 22 July, 2001). Some peasant farmers also opted for renting the uncultivated part of their land to those who depend on the summer crops, selling them part of their share in water allocation (Interview, female Palestinian refugee farmer who rented part of an irrigated land from a *Ghawarneh* peasant, *Mashare'*, 6 May, 2001). The size and quality of the crops was adversely affected, which was reflected in the drop of their crop prices in the central market (ibid).

Of all peasant landowners, those whose land was not planted with trees, the banning of summer crops paused the worst threat to their lives. Many of those used to rent their land to practicing farmers, like absentee landowners who also felt that their income was threatened by the new policy (Interview, male, peasant of slave ancestry, *Sheikh Hussein*, 4 July, 2001). In reality, the loss was inflicted on those who rented the land from them, especially the first year of the ban (Several interviews, male Palestinian refugee farmers, *Sheikh Hussein* and *Mashare'*, May – August, 2001). This is because most leases were annual and started from September in preparation for the winter season and ended by the end of summer season the following year. So despite paying the rent for an entire year, those farmers were unable to cultivate the land accordingly (ibid). JVA promised to compensate the farmers for their losses, after the Farmers Association arranged with the landowners a rare collective act of resistance by organising a sit-in in front of the Parliament (*Jordan Times*, 26 January, 2002, p.3). However, most farmers rented land through informal contracts, which were not notarised by JVA, which made the landowner entitled to the compensation and left the leaseholders in the mercy of the landowner (Several interviews, male Palestinian refugee farmers, *Sheikh Hussein* and *Mashare'*, May – August, 2001). JVA's idea of compensation was offering to rent the land from landowners who were willing to leave their land fallow for a year.

The offer to compensate farmers who usually leased their lands revealed another latent conflict within the valley, which is the bitterness of entrepreneur farmers and valley residents towards the leasing of land units to foreign workers, such as Pakistani and Egyptian farmers: 'Why should we spend our precious water on foreign workers. As for Jordanians leasing land, we will find some kind of a solution for them' (MoWI official in *Jordan Times*, 24 April, 2001). The influence of the central JV, where foreign workers leased land, affected all the practicing farmers who leased land in the valley, including the majority of Palestinian refugees and female farmers in the NJV. The MoWI did not actively attempt to 'find some kind of a solution for them' as claimed. In fact, those who were most adversely affected by the summer crops ban, the landless Palestinian refugees including small female farmers, had no voice at all in the debate over the policy or the acts of resistance against it. As argued in Chapter two weak individuals are not always able to resist changes especially in cases of latent conflict.

The consistent exclusion of renter Palestinian refugees, and female farmers and herd owners to a greater extent, from decision-making regarding access to water in the NJV led to a feeling of apathy and fatalism, which makes them less prone to resistance and more willing to adapt to changes inflicted on them. Interviews with Palestinian refugee farmers revealed that despite their relative affluence in comparison to the peasants, they still feel in a less powerful position in the Valley regarding access to water. Their status as refugees and the continuous tension over dual loyalties, seem to put them in lesser negotiable positions. Poor female farmers are in a weaker position, as they feel extremely marginal in numbers and status within the valley (Meeting with three female Palestinian refugee farmers, *Mashare'*, 12 May, 2001). That is why both male Palestinian farmers, regardless of their practice size, and poor female farmers tend to rationalise the water problem and accept the scarcity argument as a technical and ecological issue in order not to face their own marginality within the community (Several interviews, male and female Palestinian refugee farmers, *Sheikh Hussein*, *Mashare'*, and *Wadi Arrayyan*, May – August, 2001). Consequently they put more effort in trying to adapt to water share decrease and banning of summer crops. After decades of perceiving JVA as the provider of irrigation water, weak farmers reverted to fatalistic rhetoric in their rationalisation of the water problem, giving way to their belief in God as the sole provider of water over their acquired belief in man's power over nature (ibid).

The relatively affluent Palestinian farmers who practiced agriculture on large plots started to cultivate one third of the land, using the water allocated for the entire land to irrigate their reduced crop, which was only possible during the winter season (Interview, male Palestinian farmer practicing on large plots, *Sheikh Hussein*, 13 June, 2001). This led them to start searching for plots, which are located close to water streams or which contain shallow underground water drainage which would allow them to cultivate during summer (ibid). This resulted with an increase in lease prices of such lands incurring extra costs on the farmers. A female farmer who has been practicing for two decades gave up the land she leased for a land with water stream running through it, which she shared with another ten farmers and had an arrangement with them on her time allocation (Interview, female Palestinian farmer practicing on large plots, *Mashare'*, 24 July, 2001). In those cases, farmers depended on their practical knowledge of crops water needs, and sowed only as much as their water share allowed them (ibid). Poor female farmers, who used to rent small shares in agricultural units, shifted to renting cheap rainfed land on the hillsides of *Al-Mashare'*, outside the project area, for the winter and spring season (Interviews, two female Palestinian refugee farmers, *Mashare'*, 6 and 12 May, 2001). In summer, they rented small shares in lands owned by peasants or absentee landowners who had trees in part of their units and sold them a share of their allocated water (ibid). For herd owners, access to water became more difficult that many opted to reduce their cattle sizes, while others had to drive them to distant water points (Visit to Palestinian refugee herd owners, mountain sides of *Mashare'*, 17 June, 2001). Herd owners do not have a voice in JVFA and live scattered in settlements

on land to which they have no tenancy. This makes it more difficult for them to have a collective presence in formal arenas (Interview, male *As-Saqer*, formal employee and small entrepreneurial farmer and herd owner, 14 May, 2001). The losses which many farmers faced in their crops due to the scarcity of water had its effects on herd owners who used to be allowed to use the harvested land for free as pasture, which served to clear the land for the farmers. As a result of their losses, farmers started demanding payment from herd owners in return for access to their land, thus increasing the pressure on herd owners who were already suffering the loss of pasture in the valley (Interview, *As-Saqer* herd owner, *Wadi Arrayyan*, 2 June, 2001).

The increased scarcity of water contributed to creating conflicts in usually non-conflicting areas, such as the sharing of running water streams. While those streams were considered supplementary in previous years, they became the main source of irrigation water during the summers of 2001 and 2002 (Interview, male Palestinian refugee farmer, sharing water stream in *Wadi Arrayyan*, 11 June, 2001). More farmers added pumps along the stream and extended pipes to their units. The conflict over a small water source increased as the number of those exploiting it increased, some of which the stream did not even run through their land (Interview, male *Turkman* farmer sharing the same stream, 24 July, 2001). The ability to pump water to further distances using more powerful pumps gave affluent small entrepreneurial farmers an advantage over those who could not afford them (ibid). Conflict continued to arise between farmers as those who had the stream running through their land argued that it was their customary right to use the water (ibid). Despite their lack of confidence in JVA, farmers still perceived it as the authority to which the problem should be solved through (Interview, male Palestinian refugee farmer, sharing water stream in *Wadi Arrayyan*, 11 June, 2001). Once the farmers took their conflict to JVA, the authority said that none of the farmers had right to stream waters as they fall under JVA jurisdiction. This contributed to agitating the relation of farmers with JVA (Interview, Male Director, JVA, NJV directorate, 12 May, 2002).

Although, the valley lacked significant forms of collective action for access to water resources, the increased close down on illegal access to water created in some cases a new basis for collective action. Some farmers whose land units were neighbouring the canal used to pump the water directly from it, during the night (Interview, male *Ghawarneh* peasant farmer, *Wadi Arrayyan*, 2 June, 2001). As JVA employees were given more authority to protect the water resources, neighbouring farmers helped each other by watching out for the canal police. They even used cell phones to warn each other of the approaching police car (ibid). In this case, the theft of water did not affect the other farmers. That is why they were willing to support each other. They were stealing water from another source – the main water source, the canal - while their own network was not affected (ibid).

The JVA law amendment was passed in 2001, at a time when farmers where under the pressure of decreased water allocation. Although it is too early to assess the changes, which the law would incur,

it is important to present the current debate in Jordan Valley on the possible impact of the law on their lives. Experts and farmers alike believe that many farmers will be compelled to abandon the farming practices when entrepreneurial practices outpace them, attributing their success on their ability to bring modern technologies and cultivate high value crops, which would enable them to operate under conditions of scarcity. While some small landowners are not alarmed by the prospect, those who depend on practicing agriculture are worried about the impact of those changes on their livelihoods. World Bank experts do not perceive the shift in land ownership as a problem. A World Bank advisor was quoted saying that those farmers would eventually work as labour on large-scale investment farms (*Jordan Times*, 31 August, 2000, p.5). Even Jordanian experts are completely disregarding the social and cultural dimensions of agricultural practice, by assuming that small farmers can simply become wage labourers (Interview, Jordanian expert, private consultant to JVA and USAID, 20 April, 2001). Agricultural entrepreneurs, looking forward to expanding their operations, even believe that they are doing the farmers a favour by offering them jobs ((Interview, Male, Jordanian élite, Managing partner of large entrepreneurial farm in CJV, 18 July, 2001).

The above debate overlooks the large majority of Palestinian refugees who practice independent agriculture to sustain a dignified life. It overlooks the realities of rural communities for whom agriculture is a way of life. Even those, who are in formal employment, still practice agriculture on small plots. Large investors would only hire young male labour for heavy-duty jobs and young females for harvesting: the typical task given to females in family and entrepreneurial enterprises. In reality many older men and women are practicing agriculture. While Jordanian peasant females do work in wage labour, Palestinian families do not allow their daughters to work outside their farms, which raises a question about the possibility of those women finding jobs after their families lose access to agricultural land. The issue is slowly unveiling a latent conflict between Palestinian refugees who perceive themselves superior to peasant farmers regardless of their origins and landowner peasant farmers who do not practice agriculture. Palestinian refugees perceive themselves as producers, while peasant farmers are enjoying the rent paid to them for land they acquired through EGC project (Several interviews, male and female Palestinian refugee farmers, *Sheikh Hussein* and *Mashare'*, May – August, 2001). As the possibilities of those landowners selling their land increase, the Palestinian refugees are foreseeing another displacement agony in search for new land leasing opportunities. To them, the peasants of the valley gained access to land they do not deserve and would easily give it up in return for cash, which the Palestinians cannot afford to pay (ibid).

VIII.5 Donor-initiated collective action in the NJV – *'Old' practices within 'new' contexts*

Between the lack of water resources within the Jordan Valley, the inefficiency and bloated bureaucracy of JVA and the unequal distribution of water resources through corruption, the deterioration of the water distribution system fell into the vicious circle of conflict and illegal access. Foreign experts working in the NJV argue that the main reason behind the deterioration of the water

distribution system is illegal access to irrigation water through nepotism, rather than stealing (Interview with Jochen Regner, GTZ project advisor, Amman, 28 November, 2002). In their attempts to access more water resources, farmers demonstrated a general sense of apathy towards each other, despite the presence of some individual examples of cooperation. This resulted not only from the disintegration of the accessible social cohesion previously prevailing in land relations within the area, but also because of the increased presence of JVA as the sole mediating party in the relation between the individual farmer and water resources.

The farmers expected JVA to solve their water problem and blamed it for all their distress. Despite the general hostile sentiments towards JVA, almost all the farmers still admitted to the need for it to provide them with irrigation water and its services. The increased dependence on JVA was created as mentioned in Chapter seven through the systematic creation of "knowledge of expertise" in the management and distribution of water resources, which was nurtured in a context of ambiguity where farmers are kept in the dark regarding the water allocation to different farmers, the lack of transparency in the irrigation water supply and the influence of nepotism and corruption on the implementation of the water allocation schedule within NVJ. In 1999, some aid agencies, which traditionally offered technical support to JVA, such as the German Technical Cooperation (GTZ) and the French mission for agriculture and water (MREA) reached the conclusion that they cannot improve the distribution of water through technical solutions only: 'without community building or action, any technical ingenuity can be sabotaged by equally ingenious new and improved ways of manipulating the system (Interview with Jochen Regner, GTZ project advisor, Amman, 28 November, 2002). GTZ and MREA suggested that by opening up the process of water distribution in the valley, the trust of the farmers in the system would be recovered and this will consequently lead to a significant decrease in transgression occurrences, which in turn would salvage the pressure and flow inconsistencies in the network; thus reinforcing the benefits of adhering to the water schedule (GTZ 2002 and MREA, 2002).

GTZ and MREA initiated pilot projects aiming at increasing the farmers' participation in water distribution at the tertiary level. The first pilot projects for both agencies were implemented in areas outside the research area with different socio-political dynamics. The French mission second pilot project is located in *Wadi Arrayyan*, but the project was just being initiated during the fieldwork of 2002 and it was not possible to observe any of its aspects. The GTZ pilot project had already been underway for two months. Although it was still too early to assess the experience, the project presented an opportunity to investigate the farmers' responsiveness and positions regarding the possibilities of collective action for the distribution of water resources. GTZ had two main objectives for initiating a participatory water resource management system in the valley. At the operational level, the project aimed at increasing the efficiency of water distribution. At the strategic level, GTZ hoped

to encourage all farmers to have an active role in the upcoming policy changes in the Jordan Valley (Interview with Jochen Regner, GTZ project advisor, Amman, 28 November, 2002).

For the implementation of its second pilot, GTZ selected one of the pumping stations in the NJV, which supplied water to agricultural units in DA11, DA12 and, part of DA13. GTZ aimed at demonstrating to the involved farmers that by adhering to the water supply schedule they would contribute to the improvement of the water distribution system and consequently the system would become more reliable in delivering the right water pressure and flow on the exact schedule to their farms (Interview, GTZ Target group Advisor, *Mashare'*, 3 December, 2002). The pumping station director had to commit to supplying water at the required pressure all the time. Before the pilot project, directors of pumping stations used to decrease the pressure on a certain line if they were informed by the central system that the consumption increased above the maximum limit. While this protected the directors of pumping stations from retribution, it created fluctuation in the network and increased the farmers' dissatisfaction (Interview, Rémy Courcier, Regional agricultural expert, MREA, 24 November, 2002).

The project involved creating a transparent distribution system, where the farmers would know the water schedule for the entire pumping station and would have access to their own valves and meters so they could open the valve on the exact time of supply and monitor the received water flow. The GTZ is hoping that by pushing for transparency they could reduce the influence of nepotism on the water distribution process (Interview with Jochen Regner, GTZ project advisor, Amman, 28 November, 2002). By allowing the farmers access to the valve and meter, GTZ believed that the farmers' trust in the new technology would improve. The meter would no longer be an instrument through which they are controlled by JVA, but a means through which they can ensure that they are getting their rightful water share and demand for compensation when they observe a drop in the flow or pressure (ibid). At the time of the fieldwork, GTZ experts and local staff expressed satisfaction at the level of farmers' responsiveness to the project and observed significant decrease in transgression occurrences. Indeed, the current perceived success of the initiative should not be overrated because until today the presence of GTZ is still affecting the positive responsiveness to the project.

To many farmers, their confidence in the project stems from the presence of a trustworthy third partner in its implementation (Interviews with seven farmers in the pilot area, various origins, D11 & DA12, 3 – 4 December, 2002). The GTZ stationed a target group advisor in the pump station to oversee the implementation of the project. Although he is from NJV, his actions so far seem impartial to the farmers due to his independence from the politics of JVA's relation with them. He accompanies ditch riders in their rounds to ensure the implementation of the schedule, urges them to check the gate valves of farms owned by influential landowners, forces them to issue citations in cases of transgressions (Interview with a ditch rider in the pumping station, *Mashare'*, 3 December,

2002). The GTZ employee does not feel the threat of losing his job or being transferred to distant areas if he stepped on the foot of the influential landowners (Interview, GTZ Target group Advisor, *Mashare'*, 3 December, 2002). He is also above the pressure of bribery, as he comes from a relatively affluent family and receives a good salary in comparison to JVA employees. As an external foreign aid agency, although not necessarily an accurate perception, the GTZ is perceived above pressure to surrender to socio-political pressures within the valley, including those operating on the national level. It is still not clear when GTZ would conclude the project and how it would be carried out after they pull out from the area. It remains to be seen whether the commitment of the farmers would sustain beyond the period of the pilot project.

Interviews with the farmers in the pilot area revealed general satisfaction with the current control over the water distribution network. This confidence does not extend beyond the GTZ and its local employee. When asked about the possibility of taking over the operation of water distribution at the tertiary level almost all the farmers expressed doubts towards the other farmers' willingness to adhere to the system. One farmer argued that there has to be a third party to control the system otherwise all farmers including him would be tempted to steal (Interview, male peasant of slave ancestry, *Mashare'*, 4 December, 2002). Despite all the negative sentiments towards JVA and its role in the deterioration in the distribution of water resources, many farmers who have not experienced farming prior to the JVA, expressed the importance of having a powerful third party to keep them under-control: 'I want the government to remain the mediator between us. From the day we were born, we have been treated like a spring; if you do not tread on us, we would spring out of control' (ibid). Although most of the doubts towards collective action stem directly from the dynamics of socio-environmental conflict at the Jordan Valley level, this last comment highlights the dynamics of the conflict in the wider national context and the long history of the state-society relations within an authoritative system.

This last observation calls for examining the general lack of civil society organisation and collective action in Jordan at the local and the national level. Chapter Seven revealed the role of the establishment in pacifying collective action by infiltrating those institutions through influential actors that benefited from serving the establishment while keeping controversial issues off the agenda. This demonstrates how the dynamics of socio-environmental conflict at the local level can be used to serve the state's interests without its direct involvement. Comparing the lack of active civil society action in the Middle East to Latin America, Kamrava and Mora (1998) argue that in opposition to Latin America, the state did not suffer a total collapse to allow for the emergence of civil society to take its place. At the same time, the Middle Eastern leaders managed to retain 'enough political, economic and cultural sources of legitimacy to be able to supplant much of the potential appeal that the burgeoning civil society organisations might have' (p.894). It can be argued that those political, economic and cultural sources are embedded within the social processes at local levels, and operate

within the dynamics of socio-environmental conflict within those levels, making it possible for key social groups to maintain their influence within those contexts through their access to power and social networks within the establishment which they serve. Thus, despite the many failures of the state in delivering equitable services to the residents of the Jordan Valley, the dynamics of socio-environmental conflict at the local level led the farmers to doubt their own ability to act collectively and independently including in the fields of management and monitoring water distribution systems, which rely on collective action processes rather than top-down enforcement methods.

This brings the discussion to the lack of confidence in collective action in the light of the strategic objective of GTZ in the JV; that is securing an active role for the Jordan Valley farmers in the upcoming policy changes in the valley. Although the privatisation process has only been implemented in Amman, the government also intends to expand the role of the private sector in irrigation agriculture. In 2002, JVA announced its intentions to privatise the management of the irrigation system at the secondary level (*Jordan Times*, 25 August, 2002, p.3). The privatisation contract is already under way but the process might take another two years. GTZ advisors believe that there is a need to secure a place for the farmers in the upcoming changes (Interview with Jochen Regner, GTZ project advisor, Amman, 28 November, 2002). GTZ is aware that the government usually prefers to deal with one company, preferably international, but GTZ is hoping to present the JV farmers as a competition to the bidders at the national level (ibid). That is why the pilot project in NJV also involved the establishment of Farmers Water Association (FWA). The association had just been established at the time of the fieldwork and it was only being promoted within the pilot area. The GTZ objective is for FWA to expand to include all the farmers in the valley and to take the form of a business body representing all of them as possible bidders for the management of O&M at the secondary level (ibid).

The reaction of the farmers to such prospect was not as welcoming as to that of operating their own gate valves, under the umbrella of a trusted agency. Out of the 417 farming units in DA11 and DA12 only thirty farmers registered in the association, most of which were landowners (Interview, GTZ Target group Advisor, *Mashare'*, 3 December, 2002). It is too early to judge the association by the percentage of registration. However, the process of promoting it presented an opportunity to have open discussions with the farmers regarding their vision of such association and its potentials of success. The first obstacle, which the farmers believed to stand in the way of forming a viable collective organisation, was the incoherence of the farmers' make-up in the area. Landowners believed that the membership in the association should be exclusive to them, as they believed that leasing farmers changed land from one year to another and they do not have any sense of belonging to the water network locality (Interview, *Ghawarneh* peasant farmer in pilot area, *Mashare'*, 3 December, 2002). Practicing farmers who rented the land, believed that they have no place or voice

among landowners: 'landowners do not accept leasers within them!' (Interviews, three *As-Saqer* farmers in pilot area, *Mashare'*, 4 December, 2002).

Many farmers expressed doubt in their capabilities to manage and maintain a complicated water distribution system. Some even questioned the value of such association in an increasing context of scarcity. Almost all interviewed farmers expressed lack of confidence in their fellow farmers, as they no longer share any clear social coherence similar to that prior to the project. Despite the hierarchies, which were present in old social relations, the farmers could identify their position within them and managed to manoeuvre their way through those networks. They believe that they used to share the same values and ethics, which made them socially liable to each other, which is lacking in the current valley's diverse make-up. The current dynamics of socio-environmental conflict are complicated by the presence of various newcomers and disconnected land and water relations operating within diverse power and social relations which extend beyond the traditional networks through which the Jordan Valley farmers used to negotiate their conditions and sometimes manage to change them.

Although the membership in the water association is open for all farmers, it is too early to judge the possible outcome of its establishment. In order for the FWA to operate as a private company that could take over the entire secondary water management system, all practicing farmers and landowners need to be part of it. The non-participation of one agricultural unit in the association could sabotage the entire attempt. Although it is premature to discuss the success possibilities of such attempt, the reactions to the initiative revealed the current sentiments within the valley regarding collective action, which, so far, seems to have had no significant role in the face of the growing water problem within the valley. For the small farmers and weak practicing farmers, the failure of past collective experiences justifies their lack of confidence in such endeavours. The landless practicing Palestinian farmers and small female farmers feel that they have no place within such collectivities as they recognise their marginality. As discussed in Chapter two, such feeling could cause lack of resistance, leaving the marginalised with the only choice of adaptation to those changes (Connelly and Smith, 1999). For absentee entrepreneur landowners, such collectivities seem to be a nuisance as much as small farmers are obstacle to their advancement. Original landowners maintain an interest in joining those collectivities as they represent the newest fields of status and power exercise. The GTZ logic remains to be the only way for the farmers to go forward within those rapidly changing contexts. However, it remains to be seen, how far the Farmers Water Association would be able to go? How inclusive it would be? And how would the current dynamics of socio-environmental conflict in NJV influence its operation and outcome?

VIII.6 Conclusion: Resistance and adaptation in the face of increasing water scarcity – *Individual efforts to mitigate collective problems!*

This chapter has demonstrated how national policy changes which are set by international financial institutions are articulated within the dynamics of socio-environmental conflict at both the national and local levels. While some actors, such as large landowners, urban élite entrepreneurs and experts contribute to the shaping of those policies at the national level, other actors such as small practicing farmers remain excluded from the debate over the implementation of those changes at the local level. The continued failure of the state to deal with the increasing scarcity problem and its lack of transparency and immediate action in the face of pollution occurrences increased the *users' disappointment* in the face of the *state's responsibility*[9]. Dissatisfaction with the state performance was perpetuated in both the urban and rural areas. However, while the urban dwellers, particularly the élite, rallied for the privatisation of water utilities, the agricultural rural society seemed less keen to lose the controlling management of JVA.

Despite the growing irrigation water scarcity in NJV in the past years, the farmers did not demonstrate willingness or ability to act collectively to resist the impact of the changes imposed upon them. The lack of a significant collective effort to resist those changes or mitigate their impact on the farmers living practices lies in the dynamics of socio-environmental conflict in NJV which *shaped* and *have been shaped* by the changing contexts of the management of irrigation water resources in the valley since the establishment of the EGC. The farmers and landowners present in the valley whether as residents or investors opted to adopt their own methods to adapt to and resist those changes. At the national level, the urban entrepreneurs and large landowners used collective forums to influence the process of change. At the same time they could mitigate the changes through their investment in state-of-the-art irrigation technologies and accessing extra quantities of irrigation water through their powerful position and influence. Small peasant farmers resisted the impact of the decrease in water share by sabotaging of the network and 'stealing' extra water hours, to which they faced citation and fines. On the other hand, Palestinian refugee farmers and female farmers opted for various forms of adaptation due to their feelings of marginality within the multi-layered power relations and social hierarchies at the local and national levels. In their adaptation practices, farmers depended on their practical knowledge in changing their crop size and on social relations in sharing their practice with a farmer who owned an irrigated plot or in renting land which shared a water stream with other agricultural plots.

[9] Chapter Three, p.92.

CONCLUSION

PROPERTY RIGHTS, CHANGE AND CONFLICT

Towards a new definition of 'environmental problems'

Using the case of irrigation water management in the Jordan Valley, this thesis demonstrated the usefulness of Harvey's framework of 'moments' of social process in a poststructural political ecology approach to understand conflict in the context of property rights systems and change. The theoretical approach of the dissertation reveals an ideological position, which refuses to separate the symbolic from the materialistic, and *vice versa*, in understanding socio-environmental conflict within the changing contexts of common pool resources. The theoretical framework was used to critically analyse the interconnection between situations of 'permanence' and 'discontinuities': prevailing systems and processes of change in the context of the case study. Those included: a historical analysis of social and institutional arrangements for managing water resources in the past century; the contradiction within those arrangements, which undermined certain aspects of the arrangements and reinforced others; specific interventions for changing from one PRS to another; processes of shaping, manipulation and implementation of those interventions; the articulation of those arrangements within the social processes; and various crystallisations of collective action within those changing contexts: contributing to their shaping, resistance, assimilation and adaptation to them.

The thesis adopted and developed a theoretical framework that juxtaposes Harvey's 'moments' of social process (1996) with a broad adaptation of Foucault's (1972) approach to historical analysis of 'permanences' and 'discontinuities'. This offered a broader understanding of the dynamics of socio-environmental conflict in the process of change in property right systems in the Jordan Valley, through its major turning points. It also offered a case-specific platform for comparison between the different arrangements for managing irrigation water resources. This revealed that those arrangements are not value-free institutional arrangements, but each reflected different positions regarding human/nature relations as well as human/human relations expressed in values and meanings as well as in practice. On the other hand, it also revealed the contradictions inherent within any form of PRS. Although commonly managed resources reflect collective action, it does not necessarily reflect collective identity or equal relations in terms of social hierarchy as well as access and control to resources. When state-managed institutions took over the management of water resources, they did not manage to abolish the inequalities inherent within the prevailing social process. The change offered new venues for the exercise of power and exclusion and led to the individualisation of the farmers' relations with each other, without succeeding in efficiently managing water resources. Opening the valley to private investment and the privatisation of JVA services are almost definitely going to lead to augmenting the inequalities prevailing within the valley.

The claims-making process for this change was led by the large agricultural entrepreneurs who, within a competitive individualistic environment, are working collectively to have a role in the decision-making processes at the national level. Being excluded from those negotiation and decision-making fora, small peasant farmers employed acts of discursive resistance, mostly individual, while the least privileged Palestinian refugees and female farmers resorted to collective and individual forms of adaptation to deal with their realities at the local level. Forms of resistance varied due to the presence of latent and covert conflicts between groups defining themselves, through origin, tribe and gender, despite the fact that they share a 'man-made' irrigation system and a 'god-sent' ecological one.

As mentioned in the introduction, the adopted theoretical approach offers a broader framework for understanding of socio-environmental conflict, through focusing on their embeddedness within various forms of property right systems as 'permanences' and their articulation with processes of change, i.e. discontinuities. The 'moments' of social process are used as a flexible framework which provides six possible entry points to reveal those conflicts, whether in latent or overt forms, highlighting the variety of expressions of collective action beyond the conventional definition of cultural or economic institutional arrangements. The research findings illustrated the broader potentials of such approach to deal with three facets of PRSs: first, the study of PRS as permanences within which contradiction occur; second, the conventional question of change from one form of PRS to another as a process; and third, the fact that despite the disappearance of certain PRS – 'permanences' – some of their attributes persist embedded within the dynamics of social process:

i. Property rights systems as 'permanences' – *A field of contradiction, oppositions and conflict*

Chapter Two argued for a critical understanding of PRS that exceeds the economic rational of cooperation in institutional arrangements and the idealised notions of nature-benign and homogeneous CPR in pre-capitalist societies. The use of the six 'moments' of social process as a framework for defining the various forms of PRS, provide six locations of social operation through which a certain 'permanence' – PRS – could be reinforced or by which it could be undermined. At the same time, the 'moments' of social process allow the possibility to propose a 'universal' definition of different PRS, without overlooking the contradictions within those 'structures'. For example, the management of land resources in the Jordan Valley prior to the development era was dictated by a complicated overlapping of Ottoman codes, Islamic laws and customary practices, under which labour and contractual relations in agricultural practice reflected the social hierarchical relations based on tribe, origin and gender. Irrigation water resources were commonly managed between farmers under the guidance of the *Ghzawi Emir*. Although the system predominantly relied on cooperation between different farmers, they were an expression of the *Ghzawis* power in the area. In this case, the *madafa*, the main forum of collective action in the area, was an expression of forms of alliance as well as exclusion. Furthermore, despite the structured positionality of men and women within the social

hierarchy in terms of tribe, origin and gender, their acquired enough knowledge of their surrounding nature and their own abilities, which together with their belief in God as the ultimate power, allowed them to pursue alternative agricultural practice –rainfed and *muzara'a* – granting them a sufficient level of independence. Such acts of resistance emerged in sporadic individual manner, but they reveal the latent conflict prevailing within those social hierarchies at the time.

Examples of the presence of contradictions within assumed 'permanences' could be found within state-managed irrigation systems. The assumption that the state could manage and distribute irrigation water in more efficient and equitable manner is faulty because of the incapability of state institutions to carry out their responsibility and due to practices of resistance and manipulation by different actors that undermine the system. Bribery, corruption and nepotism have long been identified as major reasons behind the abortion of state water distribution systems. In NJV, today, nepotism to the *Ghzawi* leaders, urban élite and members of the monarchy, by the gatekeepers and some higher JVA employees created a stark discrepancy in access to irrigation water within the valley at a time characterised by water scarcity. This led to the surfacing of latent conflicts towards those in powerful and influential positions translated through covert acts of resistance towards the government system that allows it, such as 'illegal' access to irrigation water resources. Past rights under previous arrangements are used by large landowners in their rhetoric of entitlement to justify their 'illegal' access to water resources.

ii. Change from one property rights system to another – *'Discontinuities' and the emergence of new 'permanences'*

Chapters Six and Eight presented two cases of change from one PRS to another. In both cases, changes were triggered by broader processes, and were articulated within, shaped by and translated into specific influences at the local level. Although both cases demonstrated the role of dominant discourse in constructing a certain property right system as the most appropriate, each case was distinctive in the articulation of conflict and forms of collective action within the contexts of change. During the 1950s, the post-independence development rhetoric constructed the EGC project as an icon of modern development. Previous to the initiation of the project the latent conflict – contradictions – within the area between the *Ghzawi* landowners and small peasant and Palestinian farmers never built up to a level, which would trigger a 'rupture' in the prevailing PRS. However, the government exposed this conflict as it employed it to popularise the project as the salvation of the small and poor farmers. The potential losses the project posed for large landowners, however, triggered a collective process of resistance, ranging from direct complaint to the King to discursive practices to manipulate the process, minimising their losses and the gains of 'others' from the project. In their attempt to manipulate the process, the *Ghzawis* employed some of the moments of social processes, such as using the rhetoric of entitlement to justify their attempts to retain the largest area

of land possible; and taking advantage of their influence and status to manipulate knowledge about small farmers' rights in the project. Collective action to resist the process of change was adopted by large landowners, who shared their concerns for their status, power and influence within the valley as well as their traditional material practices based on the inter-hierarchical social and power relations with peasant labour and sharecroppers. Furthermore, the conventional powerful managed to co-opt the cooperative institutions reproducing their power through new institutional formations.

The shift to increased private investment in the Jordan Valley and private sector participation was also promoted through the dominating 'sustainable development' rhetoric of the neo-liberal orthodoxy. For entrepreneurial large landowners, the presence and pressure of the World Bank on the Jordanian government presented an opportunity for them to lobby for an increased access to land in the valley and ousting small farmers who they considered operated unfeasible farms and presented an obstacle to their expansion. Collective action as a political activity is not always mobilised as a form of *resistance* to change. In some cases, collectivities, existing or mobilised, are employed as triggers and lobbyers *for* change. Large entrepreneurial landowners used their collective form of association, which enjoyed access to the World Bank officials and the ECC to the king, to push for their agenda for change: - an agenda which they already shared with the World Bank.

As a political activity collective action cannot be removed from the patterns of power relations within which it operates. Although those who have access to power network are conventionally able to achieve or resist change through collective as well as individual actions, the weak can also act collectively to defy processes of change using discursive practices such as sabotaging the water network and 'illegal' access to water resources in the case of peasant farmers in NJV. However, collective action is not only confined to various forms of resistance. In the face of consistent exclusion and marginality, some individuals and groups, such as Palestinian refugee and female farmers, resort collectively to various forms of adaptation to change to minimise their potential losses within new contexts. The establishment of state institutions and the introduction of new actors to the area led to the erosion of previous collective forms of action that extended beyond the diversity of collective identity within the NJV, which reinforced the marginality of weaker groups. Previous to those changes, although collective identity was defined through origins and tribal divisions and alliances, collective action for the management of water resources was guided through the local leadership over the entire region.

iii. Change of PRS and persistence of their attributes – *'Old' permanences within 'new' ones*

Although the word 'intervention' usually implies an act of 'rupture' that is external to the local context of implementation and hence value-free, interventions have never been shaped independently from those contexts they targeted. However, despite this articulation between the

shaping of change and its implementation, interventions never arrived without their pre-judgments on the targeted context and pre-conceptions on what is the right way to manage resources. This tendency has been widely criticised in the past two decades and different development practices re-shaped themselves to minimise such tendency, some in genuine manner and others superficial. Indeed, the change in water management in Jordan in the 1950s was part of such tendency. Characteristic of those changes is the introduction of modern constructs, such as law, in place of custom and verbal agreements, in order to manage water resources. In some cases the new meanings introduced in those constructs could be used to de-legitimise the rights of 'others' to certain resources and reinforce underlying processes of exclusion. In the EGC project, the introduction of terms such as 'expert engineers' and 'agricultural experts' discredited the knowledge of farmers in irrigation and agricultural practice. More importantly, the lack of gender-specific language in the law allowed female exclusion from rights to land and from participating in decision-making processes to persist until today.

Different PRS have different attributes that characterises them. In some cases those attributes could be deeply embedded within the 'moments' of social process, such that change in PRS does not necessarily imply the demolishing of the entire value system and attributes, connected to the previous PRS. This is either because those attributes precede the PRS or because over time it became embedded within the society, outgrowing the property right system, which instated it in the first place. This, indeed, depends on the dynamics of social process within the society and varies from one context to another. In many cases, it is latent and overt forms of resistance by individuals and different groups within the targeted society which leads to the persistence of aspects attributed to the previous system. The loopholes in the EGC law and the manipulation of the land distribution process by original landowners, some JVA employees, the urban élite and the external powerful and influential, lead to the persistence of previous inequalities in terms of land ownership despite some changes to the land distribution pattern. More importantly, the establishment of EGCA and later JVA and its supporting cooperative institutions created new opportunity for the traditional powerful to misappropriate them; thus, recreating the power relations which prevailed in a new form in the NJV. Another reason behind the persistence of old 'permanences' attributes within new PRS, is the fact that the establishment of new institutions is usually based on assumptions about the practical needs of different groups based on their past realities, disregarding their structural needs within their positionality in highly hierarchical social and power contexts, which already strip them of their needs and rights.

This practice, in effect, only reflects unequal rules of access to and control over resources rather than the actual need of different groups. This was demonstrated by land distribution process in the EGC project, which assumed that heads of households are male and consequently were entitled to applying

for land in the project. However, even when sources of rights seem equitable in the new PRS, sometimes social and/or material practices prevent certain individuals from gaining those entitlements. In the NJV cases study, this is demonstrated in the informal ways that families deny their daughters their religiously and legally established right in inheriting agricultural land from their fathers: either through the practice of their direct authority, registering the land in their sons names during their own lives or indirect social pressure of prevailing values and practices which forces female inheritors to give up their rights in their fathers inheritance to their brothers

iv. Water as an environmental problem – *From 'water for politics' to the 'politics of water'*

In its attempt to explore the dynamics of socio-environmental conflict over water resources in the Jordan Valley within the context of the historical transformations of the past century, it was possible to reveal the transformation of the construction of 'water' as an environmental resource. Despite the diversity of those constructs, they all expose the political nature of water within those constructs. Prior to the construction of EGC, the political nature of water was of a latent from, due to the embeddedness of its use within the broader social hierarchies and power relations; and the embeddedness of its values within the broader symbolic values and the everyday living practices. However, the construction of EGC and the following integrated development era were characterised by the government's use of the 'abundance of water' for its political purposes, under the hegemony of modern development discourse. The government exposed some of the prevailing latent conflicts within the Jordan Valley – such as issues of access to land – for its own advantage, without making any effort to attend to them, which allowed the further manipulation of the power relations within the area. Today, within the rapidly globalising economic system that dominates the definition of 'sustainable development'; economic growth remains the objective of Jordan's development, with a realisation of the limitations of environmental resources. The construction of 'scarcity of water' is imperative for the new development agenda, and is being mediate today within a highly politicised environment at both the national and local levels: exposing the varying abilities of actors to influence the debate and mitigate its incurred changes.

The above examples and discussion demonstrate how the use of the 'moments' of social process can be used as entry points to explore the articulation between: 'permanences', the presence of 'contradictions' within them and the emerging 'discontinuities' from those 'contradictions' in the context of PRS and historical transformation. The theoretical framework allowed the exploration of broader understanding of socio-environmental conflict over common pool resources within changing contexts, as not only conflicts over resources but over meanings, representations and forms of relations. The approach elevated the definition of 'environmental problems' beyond the conventional question of scarcity, quantity and quality, by revealing latent and overt forms of conflict that contribute to the shaping of those problems as much as they are shaped by them, which themselves

recede and re-surface within changing contexts. The framework has the advantage of its possible application in the critical analysis of the 'universal' as it is articulated within epistemological contexts. Indeed, the framework remains to be tested in other contexts. Furthermore, this thesis leaves the possibility open for developing the theoretical framework as a practical tool in development practice, to avoid the pitfalls of the past.

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Jordan Radio and Television Corporation Archives

TV News archives: 1983 – 2002

Radio News lists: 1967 – 2002

Sixty Minutes Program Archives: 1995 - 2002

LIST OF INTERVIEWS WITH CURRENT AND FORMERS OFFICIALS, EXPERTS, AND CONTREBUTORS TO THE WATER SECTOR DEBATE

Current and former officials

Engineer Ali Al-Idwan, Assistant to JVA Secretary General for Planning

Mr. Faisal Abboud Salem, Senior Advisor to the Minister, Ministry of Water and Irrigation.

Engineer Khaled Bani Hani, Assistant to JVA Secretary General for Land and Rural Development

Engineer Nabil Al-Radaydeh, Director of Land Department, JVA

Engineer Omar Al-Abdullah, JVA Secretary General 1970 – 1982, JVA

Engineer Qais Oweis, Director of the Northern Jordan Valley Directorate, JVA

Engineer Rateb Abu Zanimeh, Director of the Northern Agricultural Directorate, Ministry of Agriculture

His Excellency, engineer Samir Kawar, Former Minister of Water and Irrigation, 1991 – 1993 and 1995 – 1997, also member of the Economic Consultative Council and owner of large farming operations in the Jordan Valley

Dr. Suhail Al-Wahshe, Special Advisor to the JVA Secretary General, JVA

His Excellency, engineer Thafer Al-Alem, JVA Secretary General

Dr. Yousif Ayyadi, Director of the Planning Directorate, JVA

Experts

Mr. Azmi Ghneim, Special studies, Water Resource Management in Irrigated Agriculture (WMIA), GTZ

Mr. H. Jochen Regner, Project Advisor, Water Resource Management in Irrigated Agriculture (WMIA), GTZ

Dr. Mauran Van Aken, independent research, anthropologist, spent two years in the central Jordan Valley.

Dr. Peter Maccornick, American private consultant to MOWI and USAID, Water Policy Support Unit, Ministry of Water and Irrigation

Engineer Ra'ed Daoud, local private consultant to the MOWI, JVA and USAID

Dr. Ra'ouf Abujaber, independent researcher, historian specialised in settlement processes during the 19th century

Mr. Rémy Courcier, regional agriculture expert, French Embassy, Regional Mission for Water and Agriculture (MREA)

Ms. Sita Tutunjian, Member of the water resources and environment unit, USAID

Dr. Taleb Abu Sharar, Dean of the land and environment department, The Hashemite University, also member of the Economic Consultative Council.

Journalists

Mr. Ashraf Al-Thawahrah, Journalist, *Addustur* Newspaper, specialising in reporting on the Jordan Valley events and issues.

Mr. Samir Abu Hilaleh, Journalist, *Al-Arab Al-Yaom* Newspaper, focusing on environmental issues including water sector and the Jordan Valley.

Other contributors to the debate

Engineer Kheir Eddin Shukri, Chairman of the Jordan Exporters and Producers Association for Fruit and Vegetables; managing partner of a large entrepreneurial agricultural operation in the Jordan Valley, also member of the Economic Consultative Council

APPENDICES

Appendix I: **Fieldwork Research Methodology**

Appendix II: **List and summary of collected laws and regulations**

Appendix III: **Tables of current and old landholdings in the research area**

Appendix IV: **Arabic terms translation**

Appendix V: **Current and old land patterns in the research area (DA10 – DA17)**

APPENDIX ONE

FIELDWORK RESEARCH METHODOLOGY

Based on the theoretical approach of this study, qualitative research methods proved to be the most appropriate for the conduct of the research and examining its hypothesis. The 'moments' of social process: discourse, values and beliefs, institutional building, power, material practices and social relations could not be properly identified and explored through rigid statistics and questionnaires. Although statistical information provided some background data, which was needed throughout the research, it does not provide the interpretative and explanatory method which qualitative research offers to achieve an in-depth understanding of the dynamics of socio-environmental conflict in the changing contexts of common pool resources (Warwick, 1993; Denzin and Lincoln, 1998). Qualitative research methods served in this study to recognise the specificity of the context and the subjectivity and positionality of both the researcher and the researched in the context of the study. It offered the flexibility in the use of the tools and methods and allowed for reflection and modification during the course of the fieldwork. As the theoretical approach of the thesis adopted the study of conflict and change within broader historical transformations, the research methodology follow a historical method in its conduct interrogating both historical text and oral history in its study of water management within the Jordan Valley.

Indeed, the main purpose of the field work was to test the hypothesis of the research. Nonetheless, the fieldwork also involved other activities some prior to and others parallel to testing the hypothesis and examining the dynamics of socio-environmental conflict in the NJV. The research is based upon fieldwork carried out in the Jordan Valley during the summers of 2000 and 2001: The first round of field work, the *exploratory fieldwork*, helped identify the Northern Jordan Valley (NJV) as the broad area of the research, while the specific boundaries of the case study area were set in the early stages of the second round of fieldwork, the *principle fieldwork*. Those were followed by another round of fieldwork in 2002, to revisit the research conclusions due to the time gap between the principle fieldwork and the writing of the thesis. The last two are discussed below under one title – the *final fieldwork*. The *exploratory fieldwork* was conducted over a period of sis weeks, between July – August 2000, six months prior to the start of the principal research fieldwork. It contributed to building a schematic understanding of the case study area and its socio-political and socio-economic context, which served to identify the target study group and outline the needed research methodology. Although in most study cases, a substantial part of this information is usually collected prior to going to the field, due to the fact that the study area is under-documented, the exploratory fieldwork and the final fieldwork involved the search for such documentation to fill in most of the background information gaps. The final fieldwork was took place between March – August 2001 and October –

December 2002. As the selection of the case study area was based on the findings of the exploratory field work, the exploratory fieldwork is offered first, followed by the description of the case study area, before moving to an elaborate discussion of the final fieldwork approach and methods.

I.1 The Exploratory Fieldwork

This short section presents the objectives of the exploratory fieldwork and its methods

I.1.a The objectives of the exploratory fieldwork: The exploratory fieldwork had four main objectives:

i. The selection of a case study: was the main objective of the exploratory fieldwork. The exploratory fieldwork methodology has departed on the basis that there are three areas to be explored: The Eastern Desert, the Northern Jordan Valley, Southern Jordan Valley. Early investigations in the exploratory fieldwork revealed that the major changes in the water management are taking place in the Jordan Valley. So it was more feasible to explore the dynamics within the Northern Jordan Valley, the Central Jordan Valley and the Southern Jordan Valley, as they offered different demographic, geographic and political factors, yet they were part of the same geographic region. The proximity between the three areas and the inter-related variability within that region has rendered researching them enriching and feasible at the same time. The objective to select the case study area implied two sub-objectives in the fieldwork. Those were:

- Obtaining a characterisation of the alternative case studies.
- Exploring key sources of contact in the alternative case studies areas.

ii. Testing the tools and methods of research: This implied conducting a pilot research in one of the alternative areas, documenting encountered problems and possible potentials for research to be taken into consideration in the final fieldwork. Since the researcher was supervising a socio-economic survey carried out in a town (Waqqas) in the Northern Jordan Valley, it was feasible and beneficial to conduct the pilot research in the same area. This contributed to familiarising the researcher with the area, its 'community' and institutions and *vice versa*. It also facilitated the carrying out of meetings, interviews and observation within the six weeks allocated for the exploratory research.

iii. Preliminary testing of the research hypothesis: Using the 'moments' of social process and their operational definitions, the pilot research did not only serve as testing of the research tools and methods. It also served for testing the research hypothesis by drawing a schematic outline of the dynamics of socio-environmental conflict in the pilot area.

iv. Planning the final fieldwork: This involved

- Exploring key sources of information to identify local experts, community based organisations, NGOs, relevant international aid agencies, and involved businesses.

- Exploring the different governmental agencies and authorities responsible for the management of water resources. This would also support the contextual part of the research as well as planning it.
- Drawing a sketch map of the turning points in the history of water management in Jordan and a more specific map of water management in the Jordan valley.
- Major poles of conflict as *identified* by different actors.
- Exploring current debated water issues.

I.1.b The exploratory fieldwork methodology

Following the objectives of the exploratory fieldwork the information collected included secondary and primary data. Each has offered a different set of information and served the objectives of the exploratory fieldwork in different ways. The exploratory fieldwork involved the collection of primary and secondary data. Secondary data included statistical information from the Department of Statistics and official documentations from the Ministry of Water and Irrigation (MOWI) and the involved aid agencies. Non-official sources included documents received from local and international experts involved in consultation work with the ministry. The *exploratory fieldwork* also benefited from following the current media coverage of water issues to identify major upcoming changes and the current national debate on the sector.

Primary data collection involved semi-structured interviews, observation and focus groups. In each of the three exploratory areas five semi-structured interviews where conducted with farmers of different age groups and gender. In the pilot area, further interviews were carried out with identified members of the community. In each of the three areas, a meeting with a CBO leader helped in identifying those sources and characterising each of them. Semi-structured interviews were also conducted with two private business representatives, two Jordanian experts on the Jordan Valley, and two government officials in MOWI. Three focus groups meetings were carried out in the pilot area: one with a group of young males, one with a group of women of various ages and occupations, and a group of farmers. Three household visits were carried out in the pilot area, and one in each of the other two exploratory areas. Table I.1.b (p.248) highlights how each of research methods used for different groups of actors contributed to fulfilling the research objectives.

I.2 The research case study area

As mentioned above the research case study area was selected on the basis of the exploratory fieldwork findings. Although the Jordan Valley was chosen as the focus of the research, a more specific case study area within the valley needed to be selected. This is because the Jordan Valley is a long ecological region, with varying ecological, social and cultural characteristics. During the exploratory research, three pilot areas along the valley were explored: one in the north, one in the

centre and a third in the south. The Northern Jordan Valley was selected as the research case study area due to the following reasons:

- The population dynamics offered an interesting case for exploring a variety of positions within the local community: Large landowners from outside the area, original large landowners, original small farmers and refugees who are small landowners, renters or labourers.
- The presence of layers of water property rights systems: state controlled water property rights, commonly managed water resources due to informal fragmentation of land ownership, left over water rights in the sides of the valley, as well as new experimental community-based irrigation systems introduced by the government.
- The community was more easily accessible through its present networks and also because the area is densely populated.
- Governmental officials in the area were more accessible, transparent and willing to volunteer information and documentation: This, indeed, should not be over-emphasised because some information remains politically sensitive and the Jordan Valley Authority employees preferred to stir away from discussing them.

Indeed, the Northern Jordan Valley remains a considerably large area and there was a need to draw specific boundaries for the targeted research area within NJV. The criterion which was used to draw the boundary for the research unity was that: it will be based on the area, which used to be owned and by one *Iqra'i*[1] family prior to the land settlement and registration in the area. The *Ghzawi* tribe is considered on the 'most influential' tribes within the Northern Jordan Valley. Their power at the time of the construction of the East *Ghor* Canal project was attributed to the role their *Emir* as the local chief and patron of the area in addition to their large agricultural land holdings within the project area.

Early interviews with members of the *Ghzawi* family, expert government employees and expert historians in addition to the consultation of available Ottoman records were employed to draw the specific boundaries of the research area. This incorporated two towns: *Sheikh Hussein* and *Al-Mashare'*. An additional town south of those two towns was added to the case study boundary area. This town is called *Wadi Arrayyan*. Three reasons were behind adding this town to the research area:

[1] An Islamic and latter Ottoman socio-political and economic setup that is similar to that of the European feudal system.

Table I.1.b: The contribution of research methods to meeting exploratory fieldwork objectives

	Objectives	Secondary data	Primary data Local population	CBOs and local NGOs	Private Businesses	Experts	Governmental officials
i	**Selection of a Case Study**						
i.1	• Characterisation of the alternative research area		• Especially socio-economic terms • Inhabitants livelihood practices	• Especially socio-economic terms • Inhabitants livelihood practices	• Especially the situated position of businesses within it	• Socio-economic terms as well as water status	• Water status as well as areas with most visible conflicts
i.2	• Identifying key sources and contacts in the research area		• Including most powerful & marginalised	• Including most powerful & marginalised	• Further key sources in the area		
ii	**Testing the research methods**	• Testing the ability to access different levels of information.	• Observation, focus groups and semi-structured interviews	• Observation, focus groups and semi-structured interviews	• Semi-structured interviews	• Semi-structured interviews	• Semi-structured interviews
iii	**Testing of research hypothesis** A preliminary understanding of the dynamics of socio-environmental conflict in the pilot area.	• Documented official discourse on water policy • History of population movements and tribal/state relations	• Social relations and the impact of the change on property rights on them. • Meaning and value of water	• Schematic understanding of power relations in the area • Schematic understanding of conflicts within the area			• Exploring officials' perspective on conflict at the pilot area's level.
iv	**Planning the final fieldwork**						
iv.1	• Identifying key sources at different levels: government officials, local experts, CBOs, NGOs, international agencies, businesses	• Key sources at the academic, governmental and international level	• Identifying key sources at the community level	• Identifying key sources at the community level	• Further key sources outside the area, related to conflict with in it	• Further key sources within the government	• Further key sources within the government
iv.2	• Exploring the different governmental agencies and authorities responsible for managing water resources	• Understanding involved institutional structures		• Identifying governmental structures at local level		• Institutional arrangement at the national level	• Institutional arrangement at the national level
iv.3	• Drawing a sketch map of the turning points in the history of water management in Jordan	• Major 'turning points'.	• Community members' perspectives on 'turning points' impacts on the area	• Community leaders' perspectives on 'turning points' impacts on the area	• Businesses' perspectives on 'turning points' impacts on them	• Local experts' general perspectives on 'turning points'	**Continued .../p.249**

Table I.1 (p.248/…Continued): The contribution of research methods to meeting exploratory fieldwork objectives

	Objectives	Secondary data	Primary data Local population	CBOs and local NGOs	Private Businesses	Experts	Governmental officials
iv.4	• Identifying major poles of conflict as identified by different actors/stakeholders at the regional and national level	• Official discourse • Social and power relations at the national level through the history of population movements and state formation in Jordan	• Preliminary understanding of conflict at the regional and national level as identified by the local population.	• Social and power relations • Conflicts within the area or between the area and others areas/actors in terms of water rights	• Exploring the rhetoric of large business, their perspectives of other actors, and affiliations they form to support their position.	• Mapping the poles of conflict as identified by the local expert's work on water issues at the national level.	• Exploring official discourse within the conflict and perspectives on other actors, and affiliations they form to support their position.
iv.5	• Identifying current debated issues	• Including upcoming major changes	• Initial reactions to upcoming changes		• Initial Reactions	• Expected change impacts	• Upcoming changes' aims

First, in the presence of the *Ghzawis* in this town was mentioned in documented travellers' books of the 19th century; second, despite the lack of *Ghzawi* presence in the town at the time of the project, it was considered part of the area under the territorial control of the *Ghzawi* tribe, and third, the family who used to hold the agricultural land in the area, *Al-Zainati*, were closely associated with the *Ghzawi* tribe, as they used to enjoy similar status in the area and were related to the *Ghzawis* by marriage. There is another administrative reason behind the decision to include *Wadi Arrayyan* in the study, that is because the three town are geographically closely located and up until 1995 *Wadi Arrayyan* was part of *Al-Mashare'* town council. Each of the three town councils incorporates a number of villages and small settlements which make up the administrative boundary of those towns, which used to change quite frequently in the past decade. Those settlements are located along and on the sides of one route which goes through and connects the entire Jordan Valley.

Town Council	Human Settlement	Population
Sheikh Hussein	**Total**	**8653**
	Sheikh Hussein	7407
	Al-Zmalyyeh	1246
Al-Mashare'	**Total**	**19034**
	Al-Mashare'	17983
	Tabaqet Fahl	713
	Seil Il-Himeh	338
Wadi Al-Rayyan	**Total**	**8590**
	Wadi Al-Rayyan	6468
	Al-Mirazzeh	950
	Abu Habil	1048
	Al-Sbeirah	29
	Abu-Falah	59
	Al-Hujaijeh	36

Table I.2: Population in the selected research area
Source: Department of Statistics, 2001

The administrative boundaries of those towns do not include the agricultural land plots under the jurisdiction of the Jordan Valley Authority, which has been managing the project since its construction under different institutional names. This issue contributed to complicating the research process, as a resident of one town might own an agricultural plot outside the neighbouring area of his/her town of residence. Consequently, the research case study area boundaries were set to include the overlap between the three above mentioned town boundaries with the parallel agricultural land plots set by the administrative boundaries of the Jordan Valley Authority.

The East *Ghor* Canal project was carried out in two period starting from the North in *'Adasiyyeh*, to the north of the research area, and moving towards the south. The first period, within which the NJV is located, included three stages and was carried out between 1958 and 1966 prior to the six-day war with Israel. During the first period, the project area was divided into 24 'Development Areas' (DA), *Ahwad* – singular *hawd*. Each block was then sub-divided into the different agricultural units to be easily irrigated by the sub-canals of the EGC. The first stage of the project included DA1 – DA10, the second included DA11 – DA18 and the third DA19 – DA24 (See map IV.6, p.127). Based on the overlapping of the administrative map and the projects map DA10 – DA17 were chosen as the Development areas within the research unit along with the three selected town councils: *Sheikh Hussein*, *Al-Mashare'*, and *Wadi Arrayyan*.

I.3 Objectives of the final fieldwork

The main objective of the final fieldwork is to test the hypothesis of the research through the six 'moments'. This was carried out over a period of six months and updated the following year. Although the research was primarily concerned with the dynamics of the conflict in the local conflict of the NJV, it also emphasised the multi-layered contextual history of the conflict. Thus, it involved the following activities:

1. Conducting and in-depth research in the Northern Jordan Valley focusing on the dynamics of the socio-environmental conflict between different actors within the area. Indeed, this was manifested as an observable conflict over specific natural resources such as water as well more unobservable or latent conflicts that operated through the 'moments' of social process.
2. Investigating the dynamics of the conflict at the regional level of the Jordan Valley as one river system and a unified administrative institution. As in the case of the Northern Jordan Valley, the conflict was manifested in an observable conflict over water resources. However, it also reflected some unobservable or latent conflicts lying within the broader contexts of social processes.
3. Exploring the dynamics of socio-environmental conflict over water resources between the area and other sectors, areas and actors at the national level, considering that water is a strategic resource being affected by changes at the local, regional and national level.

I.4 Research methodology approach

As argued throughout this thesis, the objective of this study was to explore the dynamics of socio-environmental conflict in the changing contexts of common pool resources. The research adopted a historical contextual approach which allowed the unfolding the changing dynamics of conflict over changing periods of time. The turning points that the Northern Jordan Valley has undergone in relation to the management of land and water resources since the beginning of the century were employed as the systematic structure around which the research was organised, without undermining the dialectic use of the 'moments' of social process as a theoretical framework. The 'moments' of social process were used as a lens through which the inter-related relation between property right systems, change and conflict were studied as part of a wider social process.

The research methodology around the historical 'turning points' was guided by an approach which could be 'crudely' called the 'before and after' approach. Through this approach it was possible to explore water property rights systems as a social process and draw a schematic map of inherent observable and latent conflicts within those systems at the various historical instances of water property right systems. Those 'instances' extended over varying periods of times and overlapped in most cases. Yet they could be explored in a manner that captures and categorises them as: *before* the construction of the East *Ghor* Canal, the period of implementing the project, *after* the construction of

the Canal and *today*. In dealing with various resources and actors during the fieldwork, different 'moments' of the social process provided the entry point for the remaining 'moments', especially in different contexts, situations and instances. Without underestimating the importance of discourse as the most communicative moment of all, it is not necessarily that it will always provide the entry point.

On the basis of the above, the different research questions and areas of explorations were categorised into three focuses of this study: property right systems as a social process; conflict as a social process and change as a social process. Those three facets of the ongoing social process were explored within the broader framework of the turning points of the history of management of water resources in the Jordan Valley. It should be noticed that the different 'moments' of social process flow within all the categories and sub-categories of this section even when the categorisation might seem to be segregating them. All of the following categories attempted to cover the questions in terms of *before*, *during*, *after*, and *today* as mentioned above. Furthermore, while some of the issues need to be explored at the local level, others involved exploration at the regional or national level:

1. **Property rights systems as social process:** Areas of investigation included:
   - 1.a Formal and informal legal institutions: Islamic laws, customary laws, Ottoman code, and new legal systems.
   - 1.b Procedural issues: This also included formal and informal legal institutions. However, it was important to separate it in a different category in order to investigate whether exclusion and marginalisation occurred through the procedures related to the property right systems rather than their rules.
   - 1.c Prevailing practices: Although this mainly involved exploring prevailing practices regarding access to water resources, it also extended to explore other material and social practices which shed the light on power and social relations, prevailing values, taken-for-granted practices and institutions. Some of those aspects influenced property rights systems and practices sometimes in direct manner and others in an indirect manner.
   - 1.d Land ownership patterns: Land ownership patterns revealed not only the weighted power of large landowners within the valley, but also landowners from outside the valley who represented power centres which operated within networks beyond the confinement of the valley.

2. **Change as a social process:** Change is indeed an ongoing process and it is difficult to raise questions in terms of all aspect of change. However, the following issues were possible to approach from the focal point of change:

2.a Social institutions: By studying social institutions such as tribes, kinship, family, and other affiliations based on a certain facet of social identity (gender, origin, profession, religion, etc.), the research could identify how some institutions became more important than others in the context of change. Furthermore, this highlighted how those institutions 're-organised' themselves to weaken, strengthen occurring changes or accommodate for them.

2.b Social relations: Questions on social relations did not only reveal information on changing social relations, but also on social hierarchies, power relations and changing values and beliefs *vis-à-vis* changing social relations in the context of change.

2.c Water use and agricultural practices: This did not only reveal the role of development and technology in changing agricultural and irrigation practices. It also explored the changing meaning and value of water as a resource, as well as who are the gainers and losers in the context of access to and control of water resources in materialistic terms.

3. **Conflict as a social process:** As argued in throughout this study, conflict is inherent within social processes including property right systems. However, while the exploration of latent conflict was conducted in the context of all the above suggest categories of investigation, specific questions on observable conflict were easier to investigate in a direct manner through exploring the following issues. At the same time, it is important to note that those issues contributed to revealing some facets of latent conflicts:

3.a Observable collective and individual action: Those include actions of resistance of change or certain processes, focusing on the role of affiliations, associations, CBOs and social institutions as well as aid agencies within this context. This also involved the exploration of individual practices ranging from formally complaining to the local or regional authorities to 'illegal' access to water resources.

3.b Observable conflicts: Not all conflicts are usually revealed to the same extent to researchers, especially those between members of the same family or those with highly powerful people. However, many observable conflicts could be discussed in an open manner. Those included: conflict over water shares or their re-allocation, division of inherited land or redistribution of land after the reform law, or conflict at the regional or sectoral level over water resources. The latter also revealed the discourse and ideologies of different actors within the context of conflict over water resources.

3.c Lack of action: As much as action could reveal observable conflicts, lack of action could also contribute to revealing latent conflicts. Questions to various actors about the lack of action in the face of changes that adversely affect their constructed realities revealed conflicts within the community that were concealed by their individuality which was established in the decades following the establishment of the EGC and its ruling authorities.

I.5 The research methods

The information needed for the fulfilment of the research objectives were collected using both secondary and primary data. The data collected in the exploratory fieldwork helped to identify specific sources of information for the primary fieldwork as well as to identify and characterise the research population. It is important to distinguish between 'uninvolved' sources of information, stakeholders and actors when discussing the research methods. Actors are those who are not affected by the conflict, yet they could have an impact on it. Stakeholders are those who are involved in the conflict and are affected by it. However, not all sources of information are stakeholders or actors. Some sources of information might not be involved in the conflict at all, yet they offered information that contributed to fulfilling the objectives of the research.

All sources of data and information employed in the fieldwork are listed below, categorised under secondary and primary data collection, specifying the research methods adopted for each category. In order to avoid repetition, the research methods will be specified for each main source category rather than each source being dealt with as a main category. Table I.5 (p.255) summarises the sources of information identified for collecting primary and secondary data.

I.5.a Secondary data collection

Although the exploratory fieldwork had involved the collection of secondary data, it also revealed other sources of secondary data that still needs to be collected. Some would be obtained through going to the relevant libraries, institutions and governmental archives, while others might be obtained directly from the sources of information encountered in the course of the primary data collection. Nonetheless, below is a list of the secondary data to be collected:

1. The media: This included:

a. Newspapers archives:

- Newspapers published in the early stages of the state found in the National Centre for Records and Archives: there were no newspapers published in Jordan until 1939. However, the *Palestine* newspaper was published in Jerusalem and its news covered Palestine and *Transjordan*. It was only in 1939, that newspapers were published in Jordan. However, the documentation of those newspapers is incomplete.
- *Al-Rai* Newspaper: Daily, predominantly owned by the government.
- *Addustur*: Daily, partly owned by the government
- *Al-Arab Al-Yaoum*: Daily, independent.
- *Jordan Times*: Daily, owned by *Al-Rai* yet more liberal, possibly because it is in English

Table I.5: Identified sources of secondary and primary information

Secondary data	**Primary data**					
	Local population	CBOs	NGOs	Private Business	Experts	Officials
1. Media **1.a Newspapers archives** • Al-Rai: daily, official • Addustur: daily • Al-Arab Al-Yaoum: daily; independent • Jordan Times: English Daily, liberal official • Newspapers published prior to and in the early stages of the state **1.b Television reports** **2. Official documents** • Government policy papers • Maps • Multilateral agencies studies • World Bank sector studies • Private consultancies studies **3. Codes and Laws** • The Ottoman Code • Laws and regulations **4. Land & water rights** • Landholdings under Ottoman rule • Prior to the Canal construction • Current **5. Tribal history and population movements in the Jordan Valley** **6. Statistical information**	**Farmers** • Practicing small Farmers • Practicing farmers on large plots • Small entrepreneurial Farmer • Entrepreneurial large Landowners • Labourers **Herders owners** **Mayors** **Local leaders**	**JHF rural centre Cooperative Society**	**1. National** Jordan Hashemite Fund **2. At JV level** The JV Farmers Union **3. At the local level** The NJV division of JV Farmers Union	**1. Agricultural production and export businesses** **2. Entrepreneurial members of the *Ghazzawi* family** **3. Polluting manufacturing industries**	**1. Local experts** • Private • Academics • Members of ECC • Independent research Centres • Specialised Journalists **2. International** • USAID • GTZ • MREA • Independent researchers	**1. At the National level** • Ministry of water and Irrigation • Ministry of Agriculture **2. At the regional level** • Jordan Valley Authority **3. At the local level** • Jordan Valley Directorates • Ministry of agriculture directorates in the Valley • JVA employees in NJV, pump station managers and ditch riders

Newspaper	Years	Source
▪ *Palestine*	1929 – 1937	National Centre for Records and Archives, University of Jordan
▪ *Al-Jazeerah*	1939 – 1945	National Centre for Records and Archives, University of Jordan
▪ *Al-Difa'*	1958 – 1962	National Centre for Records and Archives, University of Jordan
▪ *Risalat Al-Urdun* Journal	1958 – 1961	National Centre for Records and Archives, University of Jordan
▪ *Al-Rai Newspaper*	1987 – 2002	National Centre for Records and Archives, University of Jordan
▪ *Addustur*	1967 – 2002	National Centre for Records and Archives, University of Jordan
▪ *Al-Arab Al-Yaom*	1997 – 2002	*Al-Arab Al-Yaom* Archives
▪ *Jordan Times*	1984 – 2002	*Jordan Times* Archives

b. TV reports on water issues: Those included news reports and the reports produced by the weekly news programme "60 Minutes". The source of those reports was the Jordan Radio and Television Archives covering the years 1983 – 2001

2. Official documents: These included:

a. Government policy papers: on the Jordan Valley, water sector, agricultural sector and development plans.

b. Maps: Physical, administrative and technical maps. Physical and administrative maps were obtained from the Royal Geographical Centre, while technical maps of water projects were obtained from the Jordan Valley Authority.

c. Unilateral agencies studies: Those included published studies by USAID, as well as GTZ and MREA (French Regional Mission for Water and Irrigation), which were obtained directly from the relevant agencies.

d. World Bank studies: Those included the World Bank studies on Jordan water sector, agricultural sector and economic growth and were obtained from the Ministry of Water and Irrigation library.

e. Private consultancies studies: Those were studies carried out for the Jordan Valley Authority and the Ministry of Water and Irrigation in joint ventures with donor agencies. They were obtained directly from the private consultants.

3. Codes and Laws: These include:

a. The Ottoman code: This was obtained from the National Centre for Records and Archives

b. Laws and regulations: Those included:

i. Land settlement laws: 1930 - 1952

ii. Land and Water settlement laws: 1946 – 1988

iii. East *Ghor* Canal and Jordan Valley Authority's laws: 1959 – 2001

iv. Farmers Union laws: 1974 – 1999

v. Other related institutions laws: 1957 - 1985

Appendix II offers a detailed list of the collected laws and regulations.

4. Registered land and water rights: These included:

a. Registered land and water rights prior to the Canal construction: Ownerships patterns prior to the land reform process were obtained from the archives of the Jordan Valley Authority. At the time land was categorised according to village. Each village was divided into blocks – *Ahwad, plural of hawd*, as opposed to the new 'Development Areas', under which land was sub-divided. The blocks were given names and numbers. The conclusion of the blocks that overlap with the new block system was reached by crossing information received through interviews with the members of the *Ghzawi* and *Zenati* family members as well as the information received from the Jordan Valley Authority. This was further verified by overlapping the maps of the new 'Development Areas' with the maps of old villages and blocks. Unfortunately, the only record found at the JVA of land ownership rights in the research area dated 1962, the time at which the project was carried out. Those records are replicas of records found at the Department of Land and survey, which dated 1949 – 1960. No other records of land rights were found for the period since the end of the Ottoman rule.

The names of the old villages, then, were used in order to search for a mention of the land rights in the research in the Ottoman records. During the Ottoman rule, Northern *Ghor* , which is the Northern part of the Jordan Valley starting from *Taybeh* Valley and end at the north of the Dead sea was part of the *Ajloun* administrative area called *Liwa' Ajloun*. This was sub-divided into sub-districts called *Nawahi* – plural of *Nahiyyah*, one of which was *Nahiyyah Al-Ghor*, where all the researched old villages are located among others. The land holding and tenure in the research area during the Ottoman rule was found in the Ottoman Archives held by the Land and Survey Department of Amman.

The collected information regarding land ownership and holding included:

i. Ottoman Records: Annual registrar book for the Islamic year H1304 (A.D. 1888 – 1889) and the collection book for the Islamic years H1297 – 1327 (A.D 1881 – 1912).

ii. List of landowners' names, blocks names and number, plot number and size categorised according to village: 1958 – 1962

iii. Maps of old blocks: 1958 – 1962

iv. Maps of each *Hawd* overlapping with old blocks (missing: 5/10, 10/10, 2/14, 8/14, 3/16, 4/16, 5/16, 1/17, 2/17, 4/17)

v. Maps of old blocks from Amman Land and Survey department for missing blocks from no.iii:

a. Qlai'at: blocks 1, 3, 4, 7 and 9
b. Al-Oja Al-Janoubieh: blocks 1, 2, 3, 4, 8, 10, 11, and 12
c. Ghor Farah: blocks 24, 27, 28, 29, 30, 32, 33, 35, 36, 37, 38, 39, 40, 41, 42, 43, 48, 49, 50, 51, 54, 55, 56, 57

b. Current land ownership patterns in the NJV and water rights: Those were obtained from the Jordan Valley Authority data centre and included:

i. List of landowners' names, plot no. and size categorised according to *Hawd* – block – numbers.

ii. Maps of the entire project

iii. Maps of each *Hawd*: The list is divided into 8 (eight) development areas 10, 11, 12, 13, 14, 15, 16, 17 – each of those areas is called block , which is referred to as *Hawd* in the Jordanian land management terminology (Plural is *Ahwad*). Those blocks constitute, 8 of the original 24 blocks into which the first phase of the project was divided. The blocks were chosen as those which are as closely representative as possible of the land ownership patterns of the inhabitants of the three selected towns. Achieving an exact overlap between the three towns' inhabitants and the land ownership patterns in the project is difficult because the administrative town boundaries do not include the agricultural land plots, which are under the jurisdiction of the Jordan Valley Authority, not the local town councils. Thus, the blocks were selected on the basis of their parallel proximity to the researched town councils. The three selected towns are located as all other towns and villages in the Jordan Valley along and on sides of one route through the valley, which is parallel to the canal on its west and Jordan River further west of both of them. All the blocks in the first phase of the project were located in the area sandwiched between the canal and the Jordan River. Thus, the blocks chosen to study were those parallel to the towns and neighbouring to their administrative boundaries as demonstrated by map? (Page?). Indeed, this does not imply that only the inhabitants of those towns are owners within those blocks or that their land ownership is limited to them. Nonetheless, the blocks are closely parallel to the ownership patterns of the selected powerful families for the research.

5. Tribal history and population movements in the Jordan Valley: Although the exploratory fieldwork revealed substantial information on the anthropological history of the Valley, it also revealed that more information could be found in the memoirs of travellers to the area during the 17th, 18th and 19th century (Abu Al-Sha'ar, 1995). Those were found in the National Library and the National Centre for Records and archives.

6. Statistical information: Those included statistical information on the Jordanian population and economic and specific statistical information on the Jordan Valley population and economy. Those were obtained from the Department of the Statistics.

I.5.b Primary data collection

The collection of primary data involved a wide range of sources. The research, selection and sampling methods used varied according to the source of information. The sources of information involved six main categories: Local population, community-based organisations, non-governmental

organisations, private businesses, governmental officials, and private and donor agencies experts. Table I.5.c.1 (p.265) includes a list of all sources of primary data information and the sample size for each group. The sample sizes do not represent exact ratios for each group, but rather reflect the majority of some groups in comparison to others especially in the case of local population.

1. The local population: as emphasised in the theoretical chapter, it was crucial to the research to realise the heterogeneity of the local population in the sampling process. Thus, the study depended on theoretical sampling rather than statistical sampling in its conduct. Because there is no clear town or village boundary signifying the population unit, there is no census on which a quota sample could be based on. And in any cases censuses in Jordan do not offer information on the ratios such as Jordanians from Palestinian origins, Palestinian refugees, Jordanians from the *Ghazzawi* Tribe, Jordanians from outside the area or Egyptians among with other sources of social identity affecting the dynamics of the research. However, based on the findings of the preliminary research, it was possible to draw a map of the make-up of the local population and consequently achieve sufficient representation of different gender, age, origins, if not in the proper ratio.

The local population explored was sub-categorised in the following groups:

a. Practicing small farmers: Those are men and women farmers who own and cultivate on one land unit or less *or* those farmers who rented the land from other landowners or sharecropped on one unit or less of agricultural land. Those included peasants of various origins who bought land through the project, poorer landless Palestinian refugees, and poor landless female farmers.

b. Practicing farmers on large plots: Those are farmers who own and cultivate two or three units of agricultural land *or* farmers who rented two or three units of land for other landowners. Those were largely Palestinian refugees renting land from various peasant landowners who obtained land from the project but were not willing to take a risk in agricultural practice.

c. Small entrepreneurial farmers: Those were either residents of the area or originally from the area but residing in urban centres who started farming businesses in the area to supplement their income. They mainly rented the land from owners of agricultural units and usually cultivated them to produce specialty crops such as cherry tomatoes, flower buds and sun-dried tomatoes. Nonetheless, some small entrepreneurial farmers worked on their own land units.

d. Entrepreneurial large landowners: Those are large landowners who are either still residing in the area or from the area but living in urban centres while keeping close involvement in the management process of their farms, even though most of them have hired a manager – *wakeel* – to deal with the daily aspects of farm management. Those were mainly members of the *Ghzawi* family.

e. Herders: Although this initially included herd owners and hired shepherds, it turned out that herd owners were caring for their own cattle and did not hire any shepherds anymore, due to the fact that it is not a lucrative business anymore.

f. Wage labour: This included annual contract male labour and female daily labour.

g. Households

h. Mayors

i. Local leaders: could be MP, heads of tribes or those considered leaders within the area.

The list also initially included inhabitants that were not practicing farming or herding, but it turned out that all the inhabitants of the area relied on agriculture either as a primary source of income or a supplementary source of income.

The research methods used in collecting primary data from the local population was:

a. Observation: This involved observing:

1. Local farmers meetings which were called for by the local agricultural directorate. One meeting was carried out in *Sheikh Hussein*, one in *Mashare'* and one in *Wadi Arrayyan*. Those meetings revealed the farmers' feelings about the water supply and allocation, as well as their feelings towards each other and the JVA.
2. Visits to the *Ghzawi's madafas*: One visit was paid to *Al-Mithgal Ghzawis madafa* in *Sheikh Hussein* and another to the *Al-Hasan Ghzawi madafa* in *Al-Mashare'*: Those visits revealed the current relations between the *Ghzawis* and the local population.
3. Visits to the Jordan Valley North Directorate office: The office of the director engineer is frequently visited by farmers to apply for services, complain about water supply or to try to annul citation fees. Some farmers would enter, do their business and leave, while other farmers would sit down and have conversations with each other and the director. The visits allowed the exploration of the different farmers' relation with each other and with the JVA.
4. Visits to various households: This contributed to building an understanding of the different gender roles in relation to agricultural practice, land ownership and contribution to household income, in addition to exploring their feelings and perceptions of water management in the Jordan Valley.

b. Semi-structured interviews: Using information gathered and local resources semi-structured interviews were employed to obtain information from the local population. Some members of the population were interviewed more than once either because they were animated or because the research revealed more issues to be explored with the local population. Life history was used as an opening for the semi-structured interviews with specific reference to the 'story of water' in the area. However, questions explored issues beyond that 'water story' in order to be able to probe into the 'moments' of social process.

2. Community-based organisations: Two CBOs where identified in the area in the exploratory research:

a. Jordan Hashemite Fund (JHF) Rural Centre: Although the organisation was established by a national NGO, it is organised and lead by the community. The centre is an active community centre, which served as a starting point for the research as well as a base for the researcher.

b. The cooperative society: Most towns and villages in the Valley have a cooperative society. Although they are not as active as the NHF rural centre, its members maintain a strong relation and good knowledge of the society.

Semi-structured interviews: were employed to obtain information for leaders and members of the organisations. The interaction with the NHF rural centre leader was on a daily basis during the fieldwork and it contributed to building a general understanding of the community and allowed easy access to different members of the community.

3. Non-governmental organisations: This involves national and regional non-governmental organisations:

a. National: The Jordanian Hashemite Fund (JHF)

b. Regional: The Jordan Valley Farmers Union. The association also has subdivisions at the local level including the Northern Jordan Valley, which provided insights on the researched issues at the local level.

Semi-structured interviews would be used with members and leaders of NGOs. In the case of the national NGO, leaders of programmes located in the Valley will be interviewed. There were no activities taking place within the Farmers Union during the course of the fieldwork. However, it was possible to interview the chair of the JVFU and some of the local leaders.

4. Private businesses: Semi-structured interviews were carried out with heads and owners of private businesses. Those included practising agro-businesses as well as manufacturing industries. Heads ands owners of private businesses were purposely-selected sources. It is important to emphasis, that owners of agro-businesses included the *Ghzawis* who can also be categorised as part of the local population and some former officials in the MOWI or JVA, who were also interviewed in their capacity as current and former government officials. Those included:

a. Agricultural production and export businesses, which is called throughout this study entrepreneurial absentee landowners. Those can be defined as absentee landowners who usually supplement their income through investment in agricultural practices in the Jordan Valley, which are usually managed by a *wakeel*. The *wakeel* could be a resident of the Jordan Valley, but in some cases he is actually an agricultural engineer or an expert in agricultural practice and not necessarily from the valley. The *Wakeel* would hire ad manage labour working in the land which is usually no less than

three units in size. The operation in many cases could reach the size of 10 units, as investors tend to enlarge their operation through leasing. Many of those absentee landowners include members of the royal family, current and former government officials and members of the Jordanian urban élite.

b. Entrepreneurial large landowners of the *Ghzawi* family: who are also categorised under local population above.

c. Polluting manufacturing industries: Those might be outside the Valley, yet their practices are affecting the water quality in the Valley.

5. Government officials and employees: Semi-structured interviews were carried out with framer and current government officials those included, former minister of water and irrigation, former and current JVA secretary generals as well as other employees JVA at the central and local level, varying from assistants to the secretary general to pumping station managers and ditch riders.

6. Experts: Semi-structured interviews were carried out with local and international experts. When possible and needed, more than one round of interviews was carried out in the course of the fieldwork period. Although most of the experts to be interviewed were those whose expertise is in water sector and policies in Jordan, some of the experts were historians, who offered substantial insights on tribal history and population movements in the area.

a. Local experts: Those include private consultants, academics, independent research centres and specialised Journalists. Those also included members of the Economic Consultative Council to the King.

b. International experts: Those include consultants working on water projects funded by international agencies such as USAID and the GTZ, GTZ and MREA advisors and staff, as well as independent historians and anthropologists conducting research in the Jordan Valley.

I.5.c Sampling methods

Apart from the local population, all other sources of information were primarily *purposely selected*. However, in many cases snowballing contributed to finding other sources of information that offered insights on the research issues. Nonetheless, two constraints were mostly faced in finding and interviewing those sources. First, many of those resources were difficult to reach, with tight schedules that sometimes implied arranging appointments two weeks in advance. Second, some of those sources proved to be reluctant to reveal information, as they did not believe that the research was purely for academic purposes or just because they considered the information sought was non-disclosable. The journalists interviewed were chosen on the basis of newspapers archives research. Two journalists were identified as experts in the field and in the area because of their extensive reporting on general environmental and water issues as well as specific reporting on the Jordan Valley water and agricultural issues.

The sampling of local population depended on the principle of saturation sampling. As the research approach was based on an actor-oriented approach, there was a need to reach a sample that is representative of the characterisation of the research area. However, There was no sufficient data in the department of statistics or the Jordan Valley Authority that breaks down the makes up the local population according to the divisions that this research is concerned with, i.e. small farmers, large landowners, etc, not to mention the more complex make up of the communities in the research area in terms of regional origin or ethnicity, which this research assumes to have crucial impact on the social process within the area.

Thus, there was a need to obtain a 'rough' socio-political characterisation of each of the three towns and use that as an entry point to the community, which was carried out during the exploratory fieldwork. Rather than getting a quota sample within the town, the sampling method aimed at conducting in-depth interviews with actors from each of the different socio-political groups. Significant effort and rigorous investigation and questioning were carried out to ensure that the sample of the local population had sufficient representation of different gender, age, ethnicity and regional origin, if not the proper ratio.

Three main sources were employed to obtain a 'rough' map of socio-political composition of the three towns/areas. Using more the over-lap of information obtained from each source helped to reach the closest possible map to the 'reality' of the area. The sources were:

1. *The mayors:* Mayors –chiefs of town councils- usually have a sufficient knowledge of their 'community' structure. This is because they get in touch with a large number of their constituency through prior to the elections period and during their term of service. Mayors usually deal with the 'chiefs' or leaders of different tribes and families within their area. Not only were the mayors able to point to specific sources of entry to the town, but they helped in backing the research and gaining access to households and families within the area, as they are usually trusted by the community.
2. *Community leaders*: Those were of younger generation and had a different insight into the community that contributed to a clearer identification of different sub-groups within the community.
3. *Experts*: Those were not necessarily from the area. Some were government employees who at some point work in close contact with the area.

Table I.5.c.1 (p.265) offers a break down of all sources of primary information. A number of issues need to be highlighted:

1. The numbers above do not add up to the number of sources interviewed due to the repetition occurring through the overlapping of categorisation.
2. Interviewees were from both genders, different ages and from different regional origins and ethnicities. In the data analysis, all the interviewed local population were categorised according to gender, age, ethnicity, living practice, as well as land tenure and size. Table I.5.c.2 (p.266) offers a breakdown of the researched population in the Jordan Valley.
3. However, out of the total 84 interviews with members of the local population, 15 were peasants originals to the area, 6 were with peasants of slave origins, 6 were with members of the *Ghzawi* family, 23 were with landless farmer Palestinian refugees of 1948 and 1967, 3 were with landowners from *shafa* – mountain sides, 6 were with As-Saqer Palestinian refugees who are largely herd owners, 7 were with *Turkman* Palestinian landowners and 2 with *Zainati* small landowners. The landless Palestinian refugees included 5 female practicing farmers. Another additional interviews included 15 wage labours largely females from peasant origins.
4. Women who do own plots or have shares in them do not work in the land. They either rent it or have their husbands or brothers manage it for them. There are no statistics to back this argument. However this has been encountered during the fieldwork when searching for women farmers to interview.
5. Contrary to original plans no focus groups were conducted. Pre-arranged meetings failed to bring members of the focus group to talk in relaxed manner. Nonetheless, opportunities that came up where constructive discussion about issues of concern to the research were taken advantage of and turned into a form of focus group exercise.

Table I.5.c.1: Research methods applied for collecting primary and secondary data from identified resources

		Methods		
Actors/stakeholders/resources	No of sources	Observation	Semi-structured interviews	Documents
Local population				
Practicing small farmer	39	•	•	
Practicing farmers on large plots	14	•	•	
Small entrepreneurial farmers	3	•	•	
Large landowners	10	•	•	
Labourers	5		•	
Herd owners	6	•	•	
Households	20		•	
Mayors	5		•	
Local leaders	5	•	•	
Other JV inhabitants outside NJV	4		•	
CBOs				
NHF rural centre	3	•	•	
Cooperative societies	3		•	
NGOs				
Jordan Hashemite Fund	2		•	•
JV Farmers Union	4		•	•
Private Businesses				
Absentee entrepreneurial businesses	3		•	
Entrepreneurs from the *Ghazzawi*'s	6		•	
Polluting manufacturing industries	2		•	
Experts				
Local experts	7		•	•
International experts	5		•	•
Government officials & employees				
Ministry of water & irrigation officials	1		•	•
Jordan Valley Authority officials	8		•	•
JVA directorates employees	2	•	•	•
JVA local staff	5	•	•	•
MoA directorates	3	•	•	•

Table I.5.c.2: Characterisation of Jordan Valley population according to gender, origin and practice

		Male Population									Female Population									Total
		Palestinian refugees			Peasants					Total	Palestinian Refugees			Peasants					Total	
		As-Saqer	*Turkamn*	Other clans	Slave origin	Ghawarneh	Zainati	Ghzawi	Élite & shafa		As-Saqer	*Turkamn*	Other clans	Slave origin	Ghawarneh	Zainati	Ghzawi	Élite & shafa		
Farmers	Wage labour	-	-	-	2	-	-	-	-	2	-	-	-	3	-	-	-	-	3	**5**
	Practicing Small Farmers	6 R, H	4 (Os)	5 (1-O)	7 (3-O)	9 (Owners)	2	-	2 (Os)	35	-	-	3 (Rs)	-	1 (Owner)	-	-	-	4	**39**
	Practicing farmers on large plots	3	1 (O & R)	8 (1-O)	-	-	-	-	-	12	2 (Rs)	-	-	-	-	-	-	-	2	**14**
	Small entrepreneurial farmers	-	2 (Os)	-	-	1 (renter)	-	-	-	3	-	-	-	-	-	-	-	-	-	**3**
Large landowners	Absentee landowners	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	**1**
	Entrepreneurial Absentee landowners	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	**3**
	Large landowners	-	-	-	-	-	-	6	-	6	-	-	-	-	-	-	-	-	-	**6**
Other population within JV	Herd owners	2	-	4	-	-	-	-	-	6	-	-	-	-	-	-	-	-	-	**6**
	Rent land to Other farmers	-	-	-	1	1	-	-	-	2	-	-	-	-	1	-	-	-	1	**3**
	Other farmers Within Jordan Valley	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	**4**
	CBO leaders in Jordan Valley	-	-	-	-	1	-	-	-	1	-	-	1	-	1	-	-	-	2	**3**
	Home-makers	-	-	-	-	-	-	-	-	-	3	3	4	5	3	1	1	-	20	**20**
	Total	**11**	**7**	**17**	**10**	**12**	**2**	**6**	**6**	**75**	**5**	**3**	**8**	**8**	**6**	**1**	**1**	**-**	**32**	**107**

I.6 Issues of bias and objectivity

Classical social research has attempted for a long time to offer 'value-free' research in the quest for conducting ethical research and producing 'scientific' knowledge (Wilson, 1992). However, it is becoming more recognisable that value-free research cannot be achieved. As researchers themselves are human beings with values it is not possible for them to 'write off' themselves out of their research or to discard of their underlying ideologies and assumptions (ibid.). Rather than dismissing those influences, debates in social research have been discussing methods of dealing with those biases and their impact on social research and interpretation. This has been widely discussed by feminist social researchers and their critics, especially because feminists are conventionally associated with 'an active commitment to some other goal than the production of knowledge' that tends to overshadow their research (Hammersley and Gomm's, cited in Temple, 1997, section 2.2[2]).

Post-modernists and post-structuralists have employed a relativist approach to research. However, this is being criticised by post-modernist and post-structuralist feminists in the field of ethnographic anthropology as a means to deny the presence of a reality. This is specifically discussed in the context of how 'white male' researches that traditionally controlled the production of knowledge could use relativism 'to conclude that there is no truth to be discovered' (Masica-Lee *et. al.*, 1989). Feminist contribution to the issue of bias in research could be useful in any social research. Rather than trying to deny the presence of bias in research, feminists have engaged in exploring different methods of confronting their bias (Temple, 1997).

Having said that, I endeavoured on the fieldwork with awareness that my situated position might have a two-fold affect on the research:

- My bias as a middle class, university-educated, woman from mixed origins (Palestinian father, Jordanian mother of tribal origins) born and raised to Christian parents yet agnostic myself; lived in Amman all my life and educated in a Christian Orthodox private school. All those in addition to my previous research would contribute to my value judgement during conducting the research and my interpretation of the collected data.
- Being myself part of the researched world: During the fieldwork I assumed that the interviewees were bond to judge me according to their situated position and how they perceive me. This was based on past personal experience and my previous research. In those cases, different interviewees tended to judge me according to their different situatedness. Thus, I expected that men, either in the local community or officials might perceive me as a non-conventional Jordanian woman. In previous experiences, they were not intimidated by me but sometimes were 'amused' by the situation, which rendered the interviews hard to carry out. Women in the local populations would not see me as somebody identifying by their causes. My education and

[2] Since the article is accessed in electronic form, quotations are referenced by section rather than page.

background might intimidate some of them. Coming from a 'Western' institution also has its impact on the interviewees. Some would find it intimidating, others would be more open since they do not conceive what I would write as threatening since it is not going to be published in Arabic. I also expected that, as in my previous experience, I might be suspected of being an under-cover journalist. Thus, I expected to be treated with caution in the beginning, before building trust and having open conversations with the interviewees, especially governmental officials.

During the course of the fieldwork, I was aware of this two-fold influence on the process. However, it is important to highlight that not all my assumptions were proved right during the fieldwork. I remained aware of those assumptions, though, as I was meeting new sources everyday. Over the course of the fieldwork, I was able to overcome some of the prejudices and assumptions whether directed towards me, or my own. As my relationship with the local population developed, we were able to build trust towards each other. Over the months, the answers that were given at the beginning of the research which were based on preconceived ideas about me and the research changed as the questions were reiterated over time. I also kept a journal of my daily observations on that issue in particular from its two facets. Side notes were also added to the transcript of interviews highlighting when I felt that this issue was influencing the interviewees' answers. Temple (1997) suggestion to utilise the use of 'intellectual autobiography' seems an interesting avenue to be explored. This 'entails acknowledging that all research is a product of experiences and views of both the researcher (the autobiographical component) and those involved in the research (whose biographies influence their accounts). These influences on research are not added frills that can be removed: they are part and parcel of the research' (Temple, 1997, section 2.5). This was also important because the research depended on oral history which could be distorted by time and by subjectivity. All of this was taken into account during the fieldwork and the daily journal was assessed and used for the analysis and interpretation of collected data.

APPENDIX TWO

LIST AND SUMMARY OF COLLECTED LAWS AND REGULATIONS

II.1 List of Collected Laws

Land settlement

Law of 1930	Land parcelisation, survey and appraisal law
Law No. 9 of 1937	Land settlement law
Law No. 40 of 1952	Land and water settlement law

Land and water settlement:

Law No. 38 of 1946	Water control law
Law No. 87 of 1951	Amendment to Law No. 38 of 1946
Law No. 22 of 1957	Amendment to Law No. 31 of 1953
Law No. 51 of 1959	Water sector organisation law
Law No. 14 of 1961	Underground water control law
Law No. 34 of 1961	Amendment to law no. 14 of 1961
Law No. 15 of 1965	Amendment to law no. 51 of 1959
Law No. 59 of 1966	Amendment to law no 40 of 1952
Law No. 5 of 1967	Amendment to law no.40 of 1952
Reg. No. 12 of 1973	Amendment to reg. no.88 of 1966
Law No. 56 of 1973	Temporary Domestic Water Authority law
Reg. No. 16 of 1974	Amendment to reg. no. 88 of 1966
Reg. No. 26 of 1977	Underground water control regulation – repealed reg. 88 of 1966
Law No. 34 of 1983	Water Authority temporary law
Law No. 18 of 1988	Water Authority law – repealed law no. 34 of 1983

East *Ghor* Canal and Jordan Valley Authority

Law No. 14 of 1959	Temporary East *Ghor* Canal Law
Law No. 13 of 1960	East *Ghor* Canal Law
Reg. No. 48 of 1961	Water regulation for East *Ghor* Canal Authority
Reg. No. 33 of 1962	East *Ghor* Canal regulation
Reg. No. 50 of 1962	Amendment to East *Ghor* Canal regulation
Law No. 31 of 1962	Temporary East *Ghor* Canal Law
Reg. No. 65 of 1962	Water service for Northen *Shounneh* Regulation

Reg. No. 81 of 1962	Water service for Southern *Shounneh* Regulation
Law No. 21 of 1963	Amendment to temporary East *Ghor* Canal Law
Law No. 29 of 1963	Amendment to temporary East *Ghor* Canal Law
Reg. No. 102 of 1963	East *Ghor* Canal Authority Regulations
Law No. 31 of 1964	Amendment to temporary East *Ghor* Canal Law
Reg. No. 93 of 1965	Water regulations for East *Ghor* Canal Authority
Reg. No. 131 of 1965	Water regulations for East *Ghor* Canal Authority
Law No. 35 of 1965	Temporary amendment to East *Ghor* Canal Law
Reg. No. 13 of 1966	Amendment to water regulations for East *Ghor* Canal
Reg. No. 89 of 1966	Water regulations for East *Ghor* Canal Project
Reg. No. 35 of 1974	Amendment to reg. No. 89 of 1966
Law No. 11 of 1965	The Jordanian Regional Authority law for the utilization of Jordan River and its tributaries
Law No. 36 of 1966	Amendment to Law No. 11 of 1965
Law No. 2 of 1973	Jordan Valley Authority Law
Law No. 41 of 1975	Amendment to Law No. 2 of 1973
Law No. 18 of 1977	Jordan Valley development Law
Reg. No. 70 of 1981	Domestic water regulations for the Jordan Valley
Law No. 19 of 1988	Jordan Valley development Law
Reg. No. 23 of 1989	Amendment to domestic water regulations for the Jordan Valley
Law No. 30 of 2001	Amendment to Jordan Valley development Law

Farmers Association

Law No. 19 of 1974	Jordan Valley Farmers Association temporary law
Law No. 19 of 1997	General Jordanian Farmers Association law
Reg. No. 5 of 1999	General Jordanian Farmers Association regulation

Other related institutions

Law No. 15 of 1957	Development Council Law
Law No. 50 of 1959	Agricultural Lending Association Law
Law No. 37 of 1966	Temporary Natural Resources Organisation Law
Reg. No. 88 of 1966	By-law No. 37 of 1966 Natural Resources Organisation law
Law No. 60 of 1966	Amendment to Law No. 37 of 1966
Law No. 12 of 1968	Natural Resources Organisation law
Law No. 25 of 1976	Amendment to Law No. 12 of 1968
Law No. 30 of 1985	Amendment to Law No. 12 of 1968

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II.2 Summary of the legal and institutional structures governing the Jordan Valley since 1946

	Prior to the EGC	1959 ratified 1960	1962	1966 ratified 1968	1973	1977 ratified 1988	2001
Institution	Land and Survey Department	East *Ghor* Canal Authority (EGCA)	East *Ghor* Canal Authority (EGCA)	Natural Resources Authority (NRA)	Jordan Valley Commission (JVC)	Jordan Valley Authority (JVA)	Jordan Valley Authority (JVA) under the Ministry of Water and Irrigation
Main responsibilities	• Settlement and registration of land and water rights • Constructing or monitoring the construction of irrigation projects • Monitoring the distribution of water shares according to the water schedule	• Planning, constructing and managing the East *Ghor* Canal • The reclamation and redistribution of land units according to the provisions of the new law • Monitoring the distribution of water to the land units within the project	• Planning, constructing and managing the East *Ghor* Canal • The reclamation and redistribution of land units according to the provisions of the new law • Monitoring the distribution of water to the land units within the project • Managing the agricultural production and its marketing	• The responsibilities of the EGCA set by the previous law as well as the Central Water Authority and the Geological research & mining department • Setting Jordan's Water policy • Development and use of surface and underground water resources. • Supervising the drilling of private and public underground water wells.	• The economic and social development of the Jordan Valley • The reconstruction of public and private facilities that were damaged during the war • Construction of infrastructure including domestic and irrigation water networks, roads, electricity, etc. • City and housing planning. • Constructing health, social, educational and tourism facilities	**Integrated Development** • Developing water resources for agricultural, municipal, industrial use. • Improving the living standards through city and housing planning & the construction of vital health and social facilities • Infrastructure. • Improving the social life through the establishment of civil organisations for the valley's residents	**Integrated Development** • Developing water resources for agricultural, municipal, industrial use. • Improving the living standards through city and housing planning & the construction of vital health and social facilities • Infrastructure. • Improving the social life through the establishment of civil organisations for the valley's residents
Degree of state control	Partial	Exclusive	Exclusive	Exclusive	Exclusive	Exclusive	Partial: opened to private investment
Area under authority	Jordan	EGC project area	EGC project area	Jordan	Depression area of the Jordan River basin and the surrounding hills and side valleys –*wadis*	The region, which is under 300 E from the sea level, that stretches from the Jordanian borders in the North to the north tip of the Dead Sea in the South	**In addition** to the existing region, all areas under 500m E, stretching from the north tip of the Dead sea to the southern end of the Jordan Rift Valley towards the southern border of Jordan

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	Prior to the EGC	1959 ratified 1960	1962	1966 ratified 1968	1973	1977 ratified 1988	2001
Land rights	Agricultural land held under the *miri* or *mudawara* category	• The right of EGCA to acquire any land within the project area for the objectives of the project • Redistribution of agricultural land units in accordance with the project scheme	• The right of EGCA to acquire any land within the project area for the objectives of the project • Redistribution of agricultural land units in accordance with the project scheme	• The right of NRA to acquire any land within the EGC area or any other irrigation area to fulfil its responsibilities • Redistribution of agricultural land units in accordance with the project scheme	• The right of JVC to acquire any land within the JV area of authority for the objectives of the project • Redistribution of agricultural land units in accordance with the project scheme	• The right of JVA to acquire any land within the JV area of authority for the objectives of the project • Redistribution of agricultural land units in accordance with the project scheme	• The right of JVA to acquire any land within the JV area of authority for the objectives of the project • Redistribution of agricultural land units in accordance with the project scheme
Holding sizes	Varied from large ownership exceeding 1000d to small holdings less than 10d	Minimum unit size 30d-50d Maximum unit size 300d Maximum allowed holding size: 300d	Minimum unit size 30d-50d Maximum unit size 200d Maximum allowed holding size: 200d	Minimum unit size 30d-50d Maximum unit size 200d Maximum allowed holding size 200d	Minimum unit size 30d-50d Maximum unit size 200d Maximum allowed holding size 200d	Minimum unit size 30d-50d Maximum unit size 200d Maximum allowed holding size 200d	Unit size min. 25d – max 50d No limit to holding size 10% of original holding would be deducted for services
Acquired Development areas (DA)	N/A	DA1 – DA10 Northern Jordan Valley West of the Canal	DA11 – DA18 Northern Jordan Valley West of the Canal	DA19 – DA24 Northern and Central JV West of the Canal	DA33 – DA39, DA29 NJV East of the Canal DA25 – DA28, DA30 – DA32 CJV, West side	DA33 – DA39, DA29 NJV East of the Canal DA25 – DA28, DA30 – DA32 CJV, West side	The redistribution of the Southern JV and the newly added area of control still in process
Acquisition priorities	N/A	1. Landholders who are utilising their land by themselves. 2. Landholders who are utilising their land by leasing or sharecropping. 3. Farmers living within the project area. 4. Farmers living in the sub-governorate. 5. Farmers living in other sub-governorates.	1. Landholders who are utilising their land by themselves. 2. Farmers living within the project area. 3. Farmers living in the sub-governorate. 4. Farmers living in other sub-governorates. 5. Landholders who are utilising their land by leasing or sharecropping.	1. Landholders who are utilising their land by themselves. 2. Farmers living within the project area. 3. Farmers living in the sub-governorate. 4. Farmers living in other sub-governorates. 5. Landholders who are utilising their land by leasing or sharecropping.	1. Landholders who are utilising their land by themselves. 2. Farmers living within the project area. 3. Farmers living in the sub-governorate. 4. Farmers living in other sub-governorates. 5. Landholders who are utilising their land by leasing or sharecropping.	1.a. Landholders, living in the country, who are utilising their irrigated land by themselves. 1.b. Landholders, living in the country, who are utilising their rainfed land by themselves 2.a Landholders, living in the country, who are utilising their land by leasing or sharecropping. 2.b. Landholders through leasing more than 15yrs 3. Farmers living the JV. 4. Farmers living outside the JV. 5. Landholders living outside Jordan	1.a. Landholders, living in the country, who are utilising their irrigated land by themselves. 1.b. Landholders, living in the country, who are utilising their rainfed land by themselves 2.a Landholders, living in the country, who are utilising their land by leasing or sharecropping. 2.b. Landholders through leasing more than 15 yrs. 3. Farmers living the JV. 4. Farmers living outside the JV. 5. Landholders living outside Jordan

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	Prior to the EGC	1959 ratified 1960	1962	1966 ratified 1968	1973	1977 ratified 1988	2001
Transfer of land	• No restrictions to selling of landholdings • Should be registered at the department to be recognised	• Landholdings should be first offered to the EGCA for sale. • If the EGCA declines, the holder has the right to sell to any landless farmer residing in the project area after EGCA approval • Mortgaged land can be sold for debt closure	• Landholdings should be first offered to the EGCA for sale. • If the EGCA declines, the holder has the right to sell to any landless farmer residing in the project area after EGCA approval • Mortgaged land can be sold for debt closure	• Landholdings should be first offered to the NRA for sale. • If the NRA declines, the holder has the right to sell to any landless farmer residing in the project area after NRA approval • Mortgaged land can be sold for debt closure	• Landholdings should be first offered to the JVC for sale. • If the JVC declines, the holder has the right to sell to any landless farmer residing in the project area after JVC approval • Mortgaged land can be sold for debt closure	• Landholders were not allowed to sell their agricultural land holding to any other party except the JVA. • Mortgaged land can not be sold for debt closure	• Landholdings are allowed to be sold in the open market. • Mortgaged land can be sold for debt closure 5 years from the enacting of the law.
Water rights	• Irrigation water rights were settled and registered in accordance with land shares as private rights. • Underground water wells and springs within landholdings remained private rights. • State right to appropriate water rights	• Appropriation of all registered rights to irrigation water shares. • Right to appropriate any water rights in area • State managed distribution of irrigation water. • Non-transferable	• Appropriation of all registered rights to irrigation water shares. • Control over all surface and underground water resources in the project area (by-law code no.93 of 1965) • State managed distribution of water. • Non-transferable	• Appropriation of all registered rights to irrigation water shares. • Control over all surface and underground water resources in the project area (by-law code no.93 of 1965) • State managed distribution of water. • Non-transferable	• Appropriation of all registered rights to irrigation water shares. • Control over all surface and underground water resources in the project area (by-law code no.93 of 1965) • State managed distribution of water. • Non-transferable	• Control over all surface and underground water resources in the project area (by-law code no.93 of 1965) • State managed distribution of irrigation water. • Non-transferable	• Control over all surface and underground water resources in the project area (by-law code no.93 of 1965) • State managed distribution of irrigation water. • Non-transferable
Irrigation water costs	Only registration fees when registering land and water rights	Although the by-law code no 48 of 1961 stipulate that fees would be paid for water use, it did not specify the costs of water.	• Banana & sugar cane: JD6/d/yr up to 4000 m^3/d/yr • Trees and vegetables: JD1.5/d/yr up to 1800m^3/d/yr • Rice JD6/d/yr up to 4000m^3/d/yr • Seasonal crops outside the project area JD1/d/season up to 1000m^3/d/yr • Quantity exceeding the above limits cost 2fils/m^3 (JD1=1000fils) Code no.93 of 1965	1fils/m^3 up to 1800m^3/d/yr regardless of the crop 2fils/m^3 for quantities exceeding the 1800m^3/d/yr By-law code no. 13 of 1966 • If farmer chooses not to cultivate his land he pays a lump sum of 600fils/d/yr	3fils/m^3 regardless of the crop or the consumption level. By-law code no.35 of 1974 • If farmer chooses not to cultivate his land he pays a lump sum of 600fils/d/yr	3fils/m^3 regardless of the crop or the consumption level. By-law code no.35 of 1974 Increased to 6fils/m^3 By-law code no.23 of 1989	6fils/m^3 By-law code no.23 of 1989

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	Prior to the EGC	1959 ratified 1960	1962	1966 ratified 1968	1973	1977 ratified 1988	2001
Other relevant laws, codes and regulations		Law no.50 of 1959 • Establishing the Agricultural Credit Corporation • Giving credit to agricultural projects.		Code no.88 of 1966 Underground Water Monitoring Code • Issuing licensing for owning private wells, drilling and extraction. • Specifies the maximum allowance of water extraction from the wells. • Fees for the licenses but no fees for water consumption.	Code no.12 of 1973 Underground Water Monitoring Code • Issuing licensing for owning private wells, drilling and extraction. • Specifies the maximum allowance of water extraction. • Fees for the licenses and water consumption exceeding max allowance Law no. 19 of 1974 JV Farmers Association • Established and funded by government • All farmers are immediately considered as members in the Union • Responsibilities: contribute to agricultural policy, agricultural loans, improving agricultural productivity & marketing JV products. • Democratically elected board members- should reside in the JV	Code no.70 of 1981 Domestic Water Code in the JV • Connecting houses to water system • Fees set to be paid per m^3 consumption. Code no.26 of 1977 Underground Water Monitoring Code • Issuing licensing for owning private wells, drilling and extraction. • Specifies the maximum allowance of water extraction. • Fees for the licenses and water consumption exceeding max allowance • Limitations to the number of wells in plots. Authority has the right to prohibit wells in areas at own discretion.	Law no. 19 of 1997 Jordanian Farmers General Union • Established by the government • JV Farmers Association became a branch • Membership is optional, but higher fees. • No funding from the government • Responsibilities: contributing to agricultural policy, giving agricultural loans, improving agricultural productivity and marketing JV products. • Democratically elected board members.

APPENDIX THREE

OLD AND CURRENT LANDHOLDINGS IN THE RESEARCH AREA

III.1 Summary of land ownership in all Development Areas in 1962 and 1996

Table III.1.a: Percentage (%) of landholding area for different groups in towns and villages over lapping with research development areas in 1962

	Sheikh Hussein		*Mashare'*			*Wadi Arrayyan*			
	DA10	**DA11**	**DA12**	**DA13**	**DA14**	**DA15**	**DA16**	**DA17**	**All Areas**
Ghzawi	74.52	37.48	51.79	10.96	1.43	0.00	0.00	0.00	**29.83%**
Zainati	0.00	0.03	0.22	0.00	1.39	33.84	27.30	0.00	**6.75%**
Peasants-S[1]	6.31	6.77	8.05	6.86	8.07	0.00	0.00	0.00	**5.24%**
Peasants-G[2]	3.73	1.80	5.34	35.91	7.92	3.88	1.17	0.00	**6.45%**
Refugees	0.76	1.76	1.57	3.47	0.75	33.91	56.04	55.76	**14.02%**
As-Saqer	0.00	0.18	1.13	0.25	0.42	0.00	0.14	5.66	0.62%
Turkman	0.00	0.00	0.00	0.00	0.00	33.91	55.90	50.10	12.59%
Other	0.76	1.58	0.44	3.22	0.33	0.00	0.00	0.00	0.81%
Shafa residents	4.41	42.93	28.12	26.15	42.93	5.12	11.35	41.15	**24.63%**
Outsiders and Urban dwellers	8.20	5.58	3.94	16.62	37.51	23.02	4.14	3.09	**11.87%**
Unidentified	2.07	3.65	0.97	0.03	0.00	0.23	0.00	0.00	**1.21%**
	100%	100%	100%	100%	100%	100%	100%	100%	**100%**

Source: Calculations based on Ministry of Water and Irrigation data, 2001

Table III.1.b: Percentage (%) of landholding area for different groups within the research project development areas in 1996

	DA10	**DA11**	**DA12**	**DA13**	**DA14**	**DA15**	**DA16**	**DA17**	**All Areas**
Ghzawi	34.77	13.05	21.78	6.35	0.00	0.00	0.00	0.00	**13.75%**
Zainati	0.00	0.00	0.00	0.00	0.66	18.73	4.55	0.00	**2.26%**
Peasants-S	17.11	8.18	17.25	7.62	4.95	0.00	0.00	0.00	**9.15%**
Peasants-G	4.62	6.06	8.85	36.05	13.20	1.98	5.07	0.00	**8.81%**
Refugees	2.28	4.39	2.57	3.78	1.13	34.44	52.13	52.07	**13.34%**
Skkour	0.00	0.00	1.14	0.78	0.56	0.84	0.00	6.82	0.74%
Turkman	0.00	0.00	0.00	0.00	0.00	33.60	52.13	45.25	10.80%
Other	2.28	4.39	1.43	3.00	0.57	0.00	0.00	0.00	1.80%
Shafa residents	10.66	42.18	32.25	33.70	46.59	19.97	22.57	38.64	**29.48%**
Outsiders and urban dwellers	16.95	16.51	13.28	12.50	33.47	24.88	15.68	9.29	**18.02%**
Unidentified	13.61	9.63	4.02	0.00	0.00	0.00	0.00	0.00	**5.19%**
	100%	100%	100%	100%	100%	100%	100%	100%	**100%**

Source: Calculations based on Ministry of Water and Irrigation, 2001

[1] Peasants f slave origin
[2] *Ghawarneh* peasants

III.2 Research Development Areas overlap with towns and villages in the old block system

Table III.2: Research Development Areas (1996) overlap with old villages under which agricultural land was registered in 1962

	DA10	DA11	DA12	DA13	DA14	DA15	DA16	DA17
Glai'at								
Hamra								
Harrawiyyeh								
Buseileh								
Abu Ziad								
Himmeh								
Jurum								
'Oja Al-Shamaliyyeh								
'Oja Al-Janoubiyyeh								
Rasiyyeh								
Kafarabil								
Ghor Farah								

Source: Maps acquired from JVA (2001)

III.3 Old and Current land holdings in area, percentage of area, number of plots and percentage of holdings in terms of no. of plots in each of the research Development Areas

Table III.3.10: Area, area percentage (%), no. of land units and no. of units percentage (%) of old and current landholding area for different groups within the research Development Area No.10 (*Sheikh Hussein*)

	Land holdings in villages overlapping with DA10 in 1962				Land holdings in DA10 in 1996			
	Area (sq.m)	Area (%)	No. of units	No. of units (%)	Area (sq.m)	Area (%)	No. of units	No. of units (%)
Ghzawi	5832.981	74.51	70	66.67	3140.430	34.76	85	36.48
Zainati	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Peasants-S	493.764	6.31	23	21.90	1545.900	17.11	14	6.01
Peasants-G	292.274	3.73	12	11.43	417.690	4.62	5	2.15
Refugees	59.287	0.76	4	3.81	205.770	2.28	4	1.72
Skkour	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Turkman	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Other	59.287	0.76	4	3.81	205.770	2.28	4	1.72
Shafa residents	345.354	4.41	12	20.69	962.660	10.66	15	5.15
Outsiders and urban dwellers	642.075	8.20	5	8.62	1531.450	16.95	6	2.15
Unidentified	162.277	2.07	10	17.24	1229.770	13.61	7	3.00
Total	**7828.01 sq.m**	**100%**	**105**	**N/A[3]**	**9033.67 sq.m**	**100%**	**233 unit**	**N/A[4]**

Source: Calculations based on Ministry of Water and Irrigation, 2001

[3] Percentage of total no. of land units held does not add up to 100% because units could be shared between different individuals from different groups.
[4] ibid

Table III.3.11: Area, area percentage (%), no. of land units and no. of units percentage (%) of old and current landholding area for different groups within the research Development Area No.11 (*Sheikh Hussein*)

	Land holdings in villages overlapping with DA11 in 1962				Land holdings in DA11 in 1996			
	Area (sq.m)	Area (%)	No. of units	No. of units (%)	Area (sq.m)	Area (%)	No. of units	No. of units (%)
Ghzawi	3012.990	37.49	55	37.16	986.43	13.05	28	12.02
Zainati	2.462	0.03	1	0.68	0.00	0.00	0	0.00
Peasants-S	543.922	6.77	20	13.51	618.520	8.18	19	8.15
Peasants-G	144.970	1.80	5	3.38	457.850	6.06	13	2.15
Refugees	141.181	1.76	7	4.73	331.650	4.39	8	1.72
Skkour	14.644	0.19	1	0.67	0.00	0.00	0.00	0.00
Turkman	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Other	126.537	1.57	6	4.05	331.650	4.39	8	1.72
Shafa residents	3450.177	42.93	74	50.00	3189.050	42.18	86	5.15
Outsiders and urban dwellers	448.079	5.58	17	11.49	1248.210	16.51	36	2.15
Unidentified	293.174	3.65	12	8.11	729.120	9.64	20	8.58
Total	**8036.954**	**100%**	**148 unit**	**N/A[5]**	**7560.83 sq.m**	**100%**	**210 unit**	**N/A[6]**

Source: Calculations based on Ministry of Water and Irrigation, 2001

Table III.3.12: Area, area percentage (%), no. of land units and no. of units percentage (%) of old and current landholding area for different groups within the research Development Area No.12 (*Mashare'*)

	Land holdings in villages overlapping with DA12 in 1962				Land holdings in DA12 in 1996			
	Area (sq.m)	Area (%)	No. of units	No. of units (%)	Area (sq.m)	Area (%)	No. of units	No. of units (%)
Ghzawi	3915.073	51.79	58	47.93	1630.56	21.78	41	22.28
Zainati	16.888	0.22	2	1.65	0.00	0.00	0	0.00
Peasants-S	608.815	805	21	17.36	1291.130	17.25	32	13.73
Peasants-G	404.000	5.34	3	2.48	662.330	8.85	15	2.15
Refugees	118.589	1.57	6	4.96	192.740	2.57	5	1.72
Skkour	85.736	1.13	2	1.65	85.736	1.14	2	1.08
Turkman	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00
Other	32.853	0.44	4	3.81	107.004	1.43	3	1.63
Shafa residents	2125.943	28.12	46	38.02	2414.340	32.25	61	5.15
Outsiders and urban dwellers	298.174	3.94	9	7.44	993.870	13.28	23	2.15
Unidentified	71.587	0.95	5	4.13	300.780	4.02	7	3.80
Total	**7559.069**	**100%**	**121 unit**	**N/A[7]**	**7485.750**	**100%**	**184 unit**	**N/A[8]**

Source: Calculations based on Ministry of Water and Irrigation, 2001

[5] Percentage of total no. of land units held does not add up to 100% because units could be shared between different individuals from different groups.
[6] ibid
[7] ibid
[8] ibid

Table III.3.13: Area, area percentage (%), no. of land units and no. of units percentage (%) of old and current landholding area for different groups within the research Development Area No.13 (*Mashare'*)

	Land holdings in villages overlapping with DA13 in 1962				Land holdings in DA13 in 1996			
	Area (sq.m)	Area (%)	No. of units	No. of units (%)	Area (sq.m)	Area (%)	No. of units	No. of units (%)
Ghzawi	422.937	10.96	27	12.50	230.21	6.35	6	6.45
Zainati	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Peasants-S	264.606	6.86	8	3.70	276.230	7.62	8	8.60
Peasants-G	1386.011	35.91	16	7.41	1307.260	36.05	34	36.56
Refugees	133.825	3.47	78	36.11	137.170	3.78	4	4.30
Skkour	9.330	0.25	1	0.46	28.220	0.78	1	1.08
Turkman	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Other	32.853	3.22	77	35.65	108.95	3.00	3	3.22
Shafa residents	1009.307	26.15	11	5.09	1221.730	33.69	29	31.18
Outsiders and urban dwellers	642.047	16.63	82	37.96	453.310	1250	12	12.90
Unidentified	1.269	0.03	1	0.46	0.00	0.00	0	0.00
Total	**3860.002**	**100%**	**216 unit**	**N/A[9]**	**3625.910**	**100%**	**93 unit**	**N/A[10]**

Source: Calculations based on Ministry of Water and Irrigation, 2001

Table III.3.14: Area, area percentage (%), no. of land units and no. of units percentage (%) of old and current landholding area for different groups within the research Development Area No.14 (*Mashare'*)

	Land holdings in villages overlapping with DA14 in 1962				Land holdings in DA14 in 1996			
	Area (sq.m)	Area (%)	No. of units	No. of units (%)	Area (sq.m)	Area (%)	No. of units	No. of units (%)
Ghzawi	73.869	1.43	3	2.44	0.00	0.00	0	0.00
Zainati	71.745	1.39	4	3.25	33.91	0.66	1	0.85
Peasants-S	416.46	8.07	12	9.76	253.980	4.95	7	5.93
Peasants-G	408.614	7.92	16	13.01	676.950	13.20	14	11.86
Refugees	38.498	0.75	2	1.63	57.870	1.13	2	1.69
Skkour	21.785	0.42	1	0.81	28.980	0.56	1	0.84
Turkman	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Other	32.853	0.33	1	0.81	108.95	0.56	1	0.84
Shafa residents	2216.128	42.93	61	49.59	2389.810	46.59	53	44.92
Outsiders and urban dwellers	1936.352	37.51	50	40.65	1716.460	33.47	4	34.75
Unidentified	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Total	**5161.666**	**100%**	**123**	**N/A[11]**	**5128.980**	**100%**	**118 unit**	**N/A[12]**

Source: Calculations based on Ministry of Water and Irrigation, 2001

[9] Percentage of total no. of land units held does not add up to 100% because units could be shared between different individuals from different groups.
[10] ibid
[11] ibid
[12] ibid

Table III.3.15: Area, area percentage (%), no. of land units and no. of units percentage (%) of old and current landholding area for different groups within the research Development Area No.15 (*Wadi Arrayyan*)

	Land holdings in villages overlapping with DA15 in 1962				Land holdings in DA15 in 1996			
	Area (sq.m)	Area (%)	No. of units	No. of units (%)	Area (sq.m)	Area (%)	No. of units	No. of units (%)
Ghzawi	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Zainati	1499.066	33.84	11	17.74	737.07	18.73	22	20.75
Peasants-S	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Peasants-G	172.077	3.88	4	6.45	77.990	1.98	2	1.89
Refugees	1502.439	33.91	17	27.42	1355.060	34.44	35	33.02
Skkour	0.00	0.00	0	0.00	33.110	0.84	1	0.94
Turkman	1502.439	33.91	17	27.42	1321.950	33.60	34	32.08
Other	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Shafa residents	226.567	5.11	20	32.26	785.560	19.97	22	20.75
Outsiders and urban dwellers	1019.973	23.02	11	17.74	978.980	24.88	25	23.58
Unidentified	10.277	0.23	1	1.61	0.00	0.00	0	0.00
Total	**4430.399**	**100%**	**62 unit**	**N/A[13]**	**3934.66**	**100%**	**106 unit**	**N/A[14]**

Source: Calculations based on Ministry of Water and Irrigation, 2001

Table III.3.16: Area, area percentage (%), no. of land units and no. of units percentage (%) of old and current landholding area for different groups within the research Development Area No.16 (*Wadi Arrayyan*)

	Land holdings in villages overlapping with DA16 in 1962				Land holdings in DA16 in 1996			
	Area (sq.m)	Area (%)	No. of units	No. of units (%)	Area (sq.m)	Area (%)	No. of units	No. of units (%)
Ghzawi	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Zainati	1411.893	27.30	21	22.83	210.87	4.55	6	4.96
Peasants-S	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Peasants-G	60.592	1.17	3	3.26	235.030	5.07	4	3.31
Refugees	2897.543	56.04	23	25.00	2417.070	52.13	67	55.37
Skkour	6.172	0.13	1	1.09	0.00	0.00	0	0.00
Turkman	2891.371	55.91	22	23.91	2417.070	52.13	67	55.37
Other	0.00	0.00	0	0.00	0.00	33.60	0	0.00
Shafa residents	586.954	11.35	38	41.30	1046	22.57	28	23.14
Outsiders and urban dwellers	213.95	4.14	8	8.70	727.220	15.68	16	13.22
Unidentified	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Total	**5170.932**	**100%**	**92 unit**	**N/A[15]**	**3934.66**	**100%**	**106 unit**	**N/A[16]**

Source: Calculations based on Ministry of Water and Irrigation, 2001

[13] Percentage of total no. of land units held does not add up to 100% because units could be shared between different individuals from different groups.
[14] ibid
[15] ibid
[16] ibid

Table III.3.17: Area, area percentage (%), no. of land units and no. of units percentage (%) of old and current landholding area for different groups within the research Development Area No.17 (*Wadi Arrayyan*)

	Land holdings in villages overlapping with DA17 in 1962				Land holdings in DA17 in 1996			
	Area (sq.m)	Area (%)	No. of units	No. of units (%)	Area (sq.m)	Area (%)	No. of units	No. of units (%)
Ghzawi	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Zainati	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Peasants-S	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Peasants-G	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Refugees	1340.228	55.76	19	40.43	1110.310	52.07	25	52.08
Skkour	135.905	5.65	3	6.38	145.340	6.82	5	10.42
Turkman	1204.323	50.11	16	34.05	964.970	45.25	20	41.66
Other	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Shafa residents	989.208	41.15	25	53.19	824.100	38.64	18	37.50
Outsiders and urban dwellers	74.219	3.09	3	6.38	198.100	9.29	5	10.42
Unidentified	0.00	0.00	0	0.00	0.00	0.00	0	0.00
Total	**2403.655**	**100%**	**47 unit**	**N/A[17]**	**2132.510**	**100%**	**48 unit**	**N/A[18]**

Source: Calculations based on Ministry of Water and Irrigation, 2001

[17] Percentage of total no. of land units held does not add up to 100% because units could be shared between different individuals from different groups.
[18] ibid

APPENDIX FOUR

ARABIC TERMS TRANSLATION

'Abd: slave – plural *'Abeid*

'Ain: Water spring

Dawaleeb: a system of irrigation water used in flat land, consisting of a continuous canal spiralling in angular lines within the land to cover all the crop. The flood of water would flow through the continuous canal to irrigate all the crops in the land – singular *dulab.*

Dira: homeland

Emir: Prince

faddan is the area of land which can be ploughed by a pair of oxen in one day. Abujaber (1989) defines the *faddan* as the area of land cultivated by a yoke of oxen during a whole season.

Fallah: a farmer who worked in land that he did not own

fasil' – plural *fousoul* – water turn in terms of time: either full day or full night.

Feda'yyeen is the term used to refer to the Palestinian groups, which were formed after the occupation of the West Bank and Gaza in 1967 to resist the occupation and liberate Palestinian lands. The Arabic word *feda'i* literally means, a person who is willing to give up his life for a rightful cause.

Ghawarneh: Those who are from the *Ghawr* or *Ghor* area

Ghor: The depression area

Gisem: A word used in agricultural practice in the Jordan Valley to imply sharecropping arrangments

haq maseel, which means the right for irrigation water to flow into a land

harrath: ploughman – plural *harrathein*

'husas; shares – singular *'hussa*

I'goud: a system of parallel straight lined water canals used for irrigating sloping lands, water would flow through a main connecting canal distributing the water along the *I'goud* one at a time. The farmers would close each *'aged* –singular - to allow the flow of water to move to the following one.

Iqta': Land bestowed upon certain individuals by Islamic rulers, establishing them as local rulers of the area bestowed upon them: A socio-political and economic setup similar to that of the European feudal system.

Jaha: a group of esteemed members of a tribe.

Kathar: The small mountain hills separating the valley from its flood plain

Khalifa or *Caliph*: a term used after the death of Prophet Mohammed to refer to the person that is following him in the leadership of the Moslems.

Khawa: Payment made by peasants and towns people to powerful tribes in order to ensure their protection and security against their aggression

Liwa': Sub-province – plural *Alwiyyah*

Madafa: Traditional Arab Guest house

Mejelle: Ottoman civil law

Zor: the wild flood area on the river bank

Miri agricultural land under the control of the Ottoman state to which farmers were given usurfruct rights to cultivate

Metrouke: land is 'land left for the use of the public' either as a highway or as land 'assigned for the inhabitants generally of a village or town or of several villages or towns grouped together'

Mewat land 'is the land occupied by no one, and has not been left for the use of the public.

Mudawara (transferred) land refers to land, which was owned by Sultan Abdul Hamid as his private property but was taken over by the State after the Turkish Revolution in 1908 (UNRWA, 1956). Tute (1927) describes the *Mudawara* land as aquired by Sultan Hamid 'by gift, by private purchase and at auction sales' (p.120).

Mulk: In Islamic law implies fully held private property, in Ottoman law it referred to residential property within village and town boundaries.

murabe': The word originates from *rubo'* which means one quarter and it refers to the arrangement in which workers in agricultural land were given room, board and one quarter of the harvest from the production of the land after deducting the costs.

Musha'a: land collectively owned by peasant villagers, practising arable cultivation and herding, and periodically redistributed among members

Muzara'a: Partnership sharecropping, where one party primarily contributes the land and another contributes the labour. Both parties agree on the distribution of production according to the respective contribution to the costs.

Nahr al-Urdun: Jordan River

Nahya: district – plural *Nawahi*

Qanat: water canal – plural *qanawat*

Raqaba: ownership rights

Shafa: East mountain sides of the Jordan valley, where several towns are located and whose residents land ownership extended towards the valley.

Shwal: a sac that holds around 20Kg of wheat

Tasarrof: usufruct rights

Wade' Al-yad –placement of hand.

Wadi: Valley

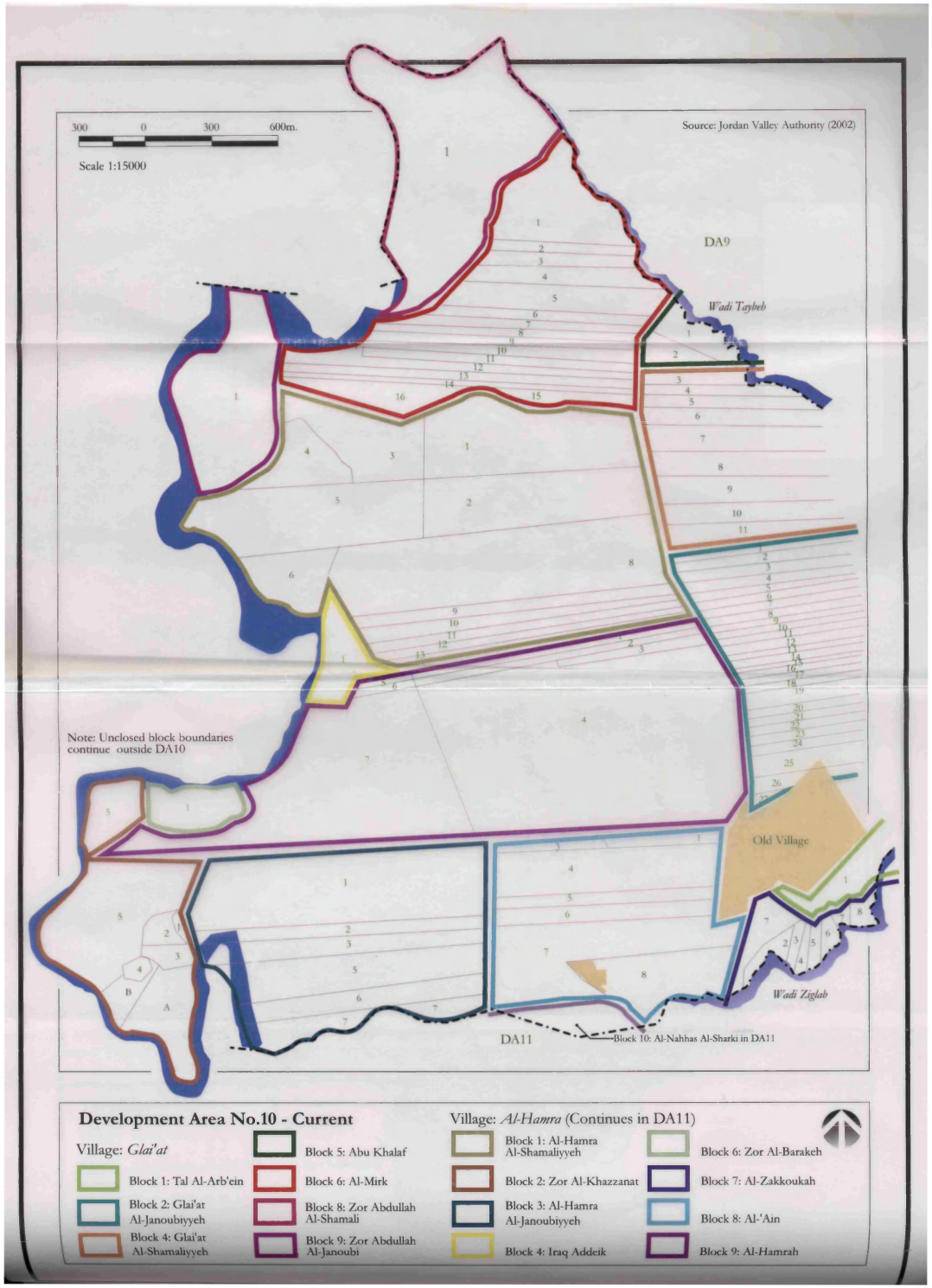
Wajiha: Face – meaning a side of a plot of land

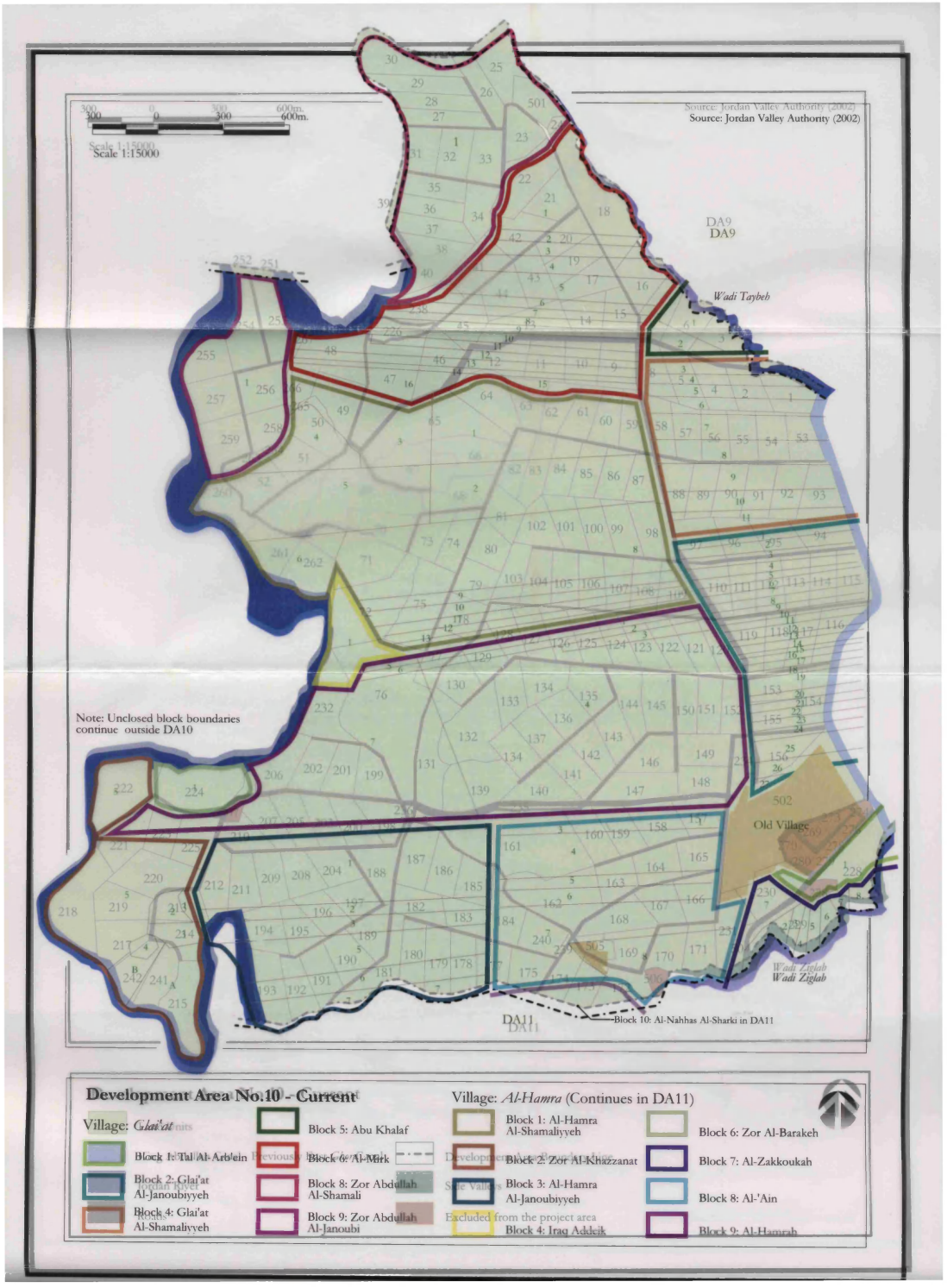
Waqf land was theoretically held in the ownership of the Deity. In practice it is a *miri* or *mulk* property that has been dedicated for religious or charitable object

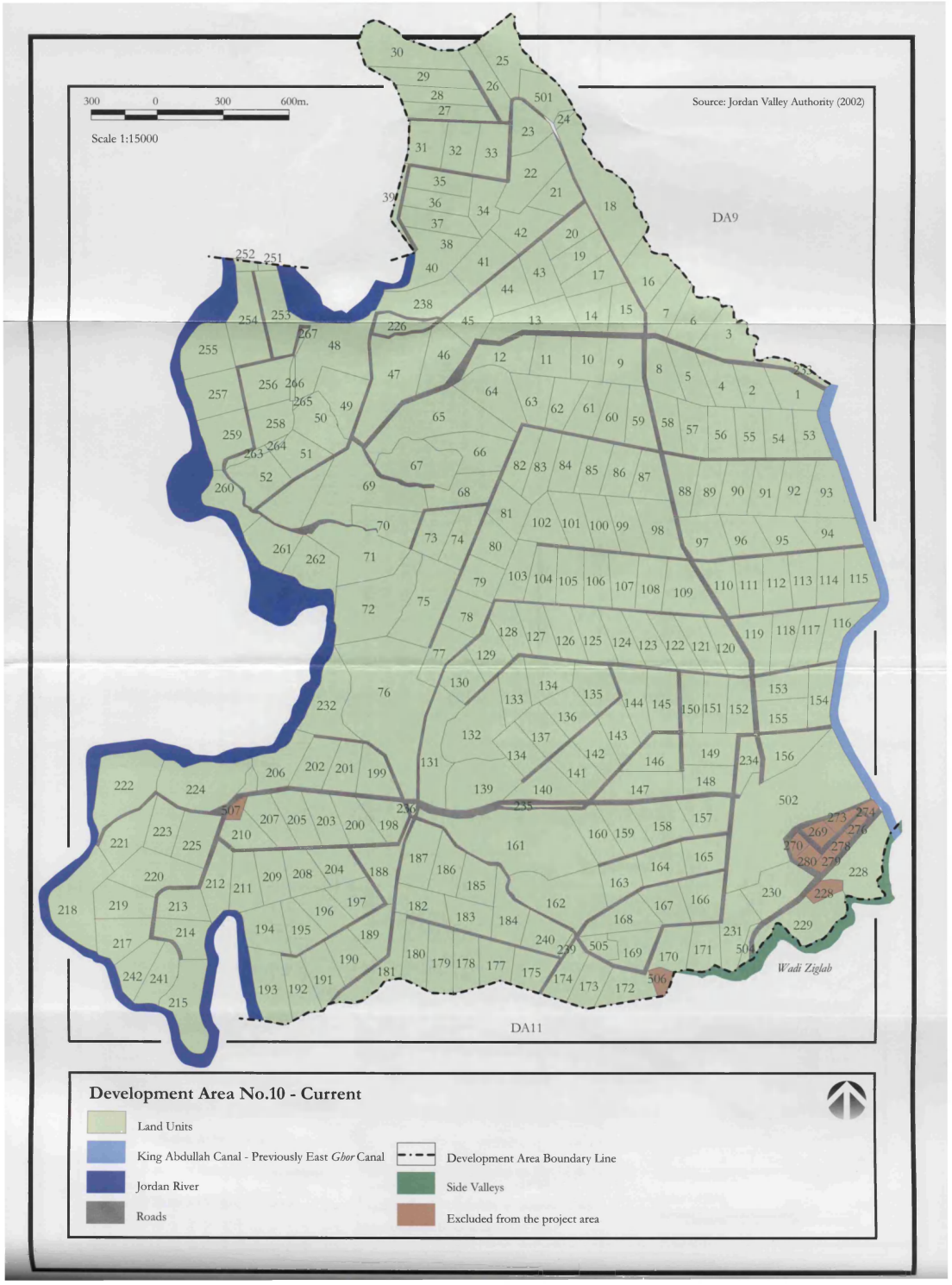
Wilaya: Province – plural *Wilayat*

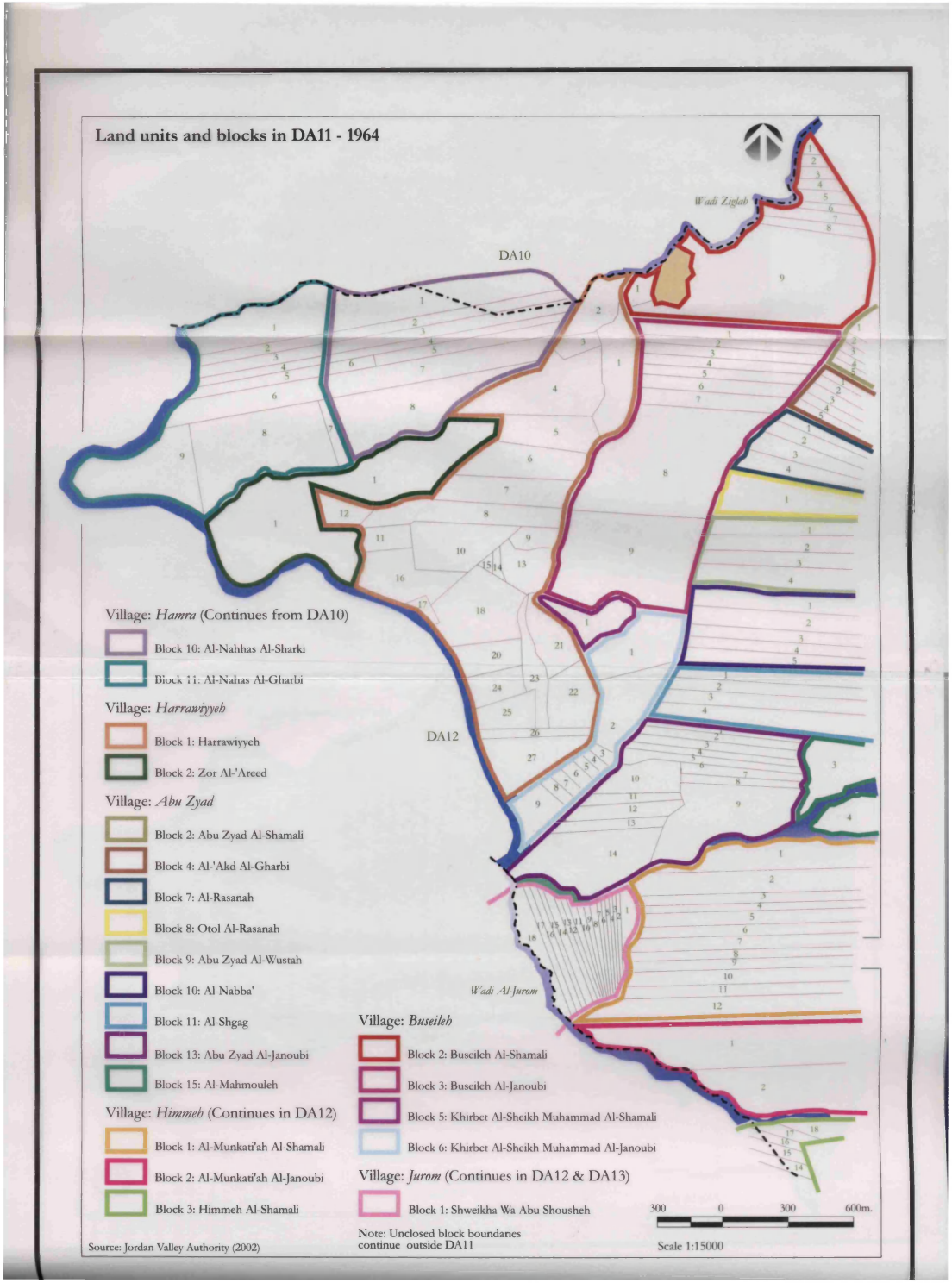
APPENDIX FIVE

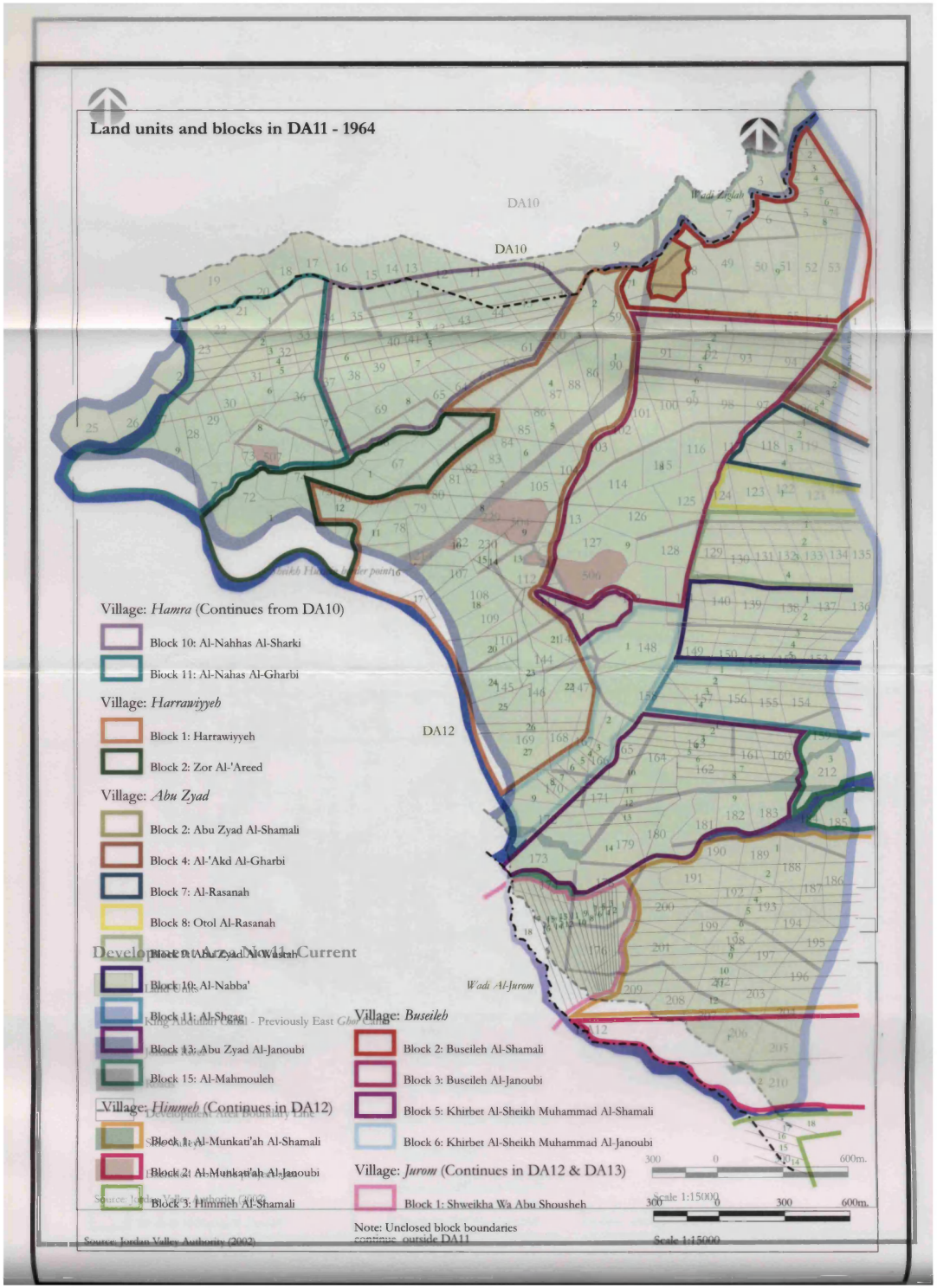
OLD AND CURRENT LAND PATTERNS IN THE RESEARCH AREA (DA10 – DA17)

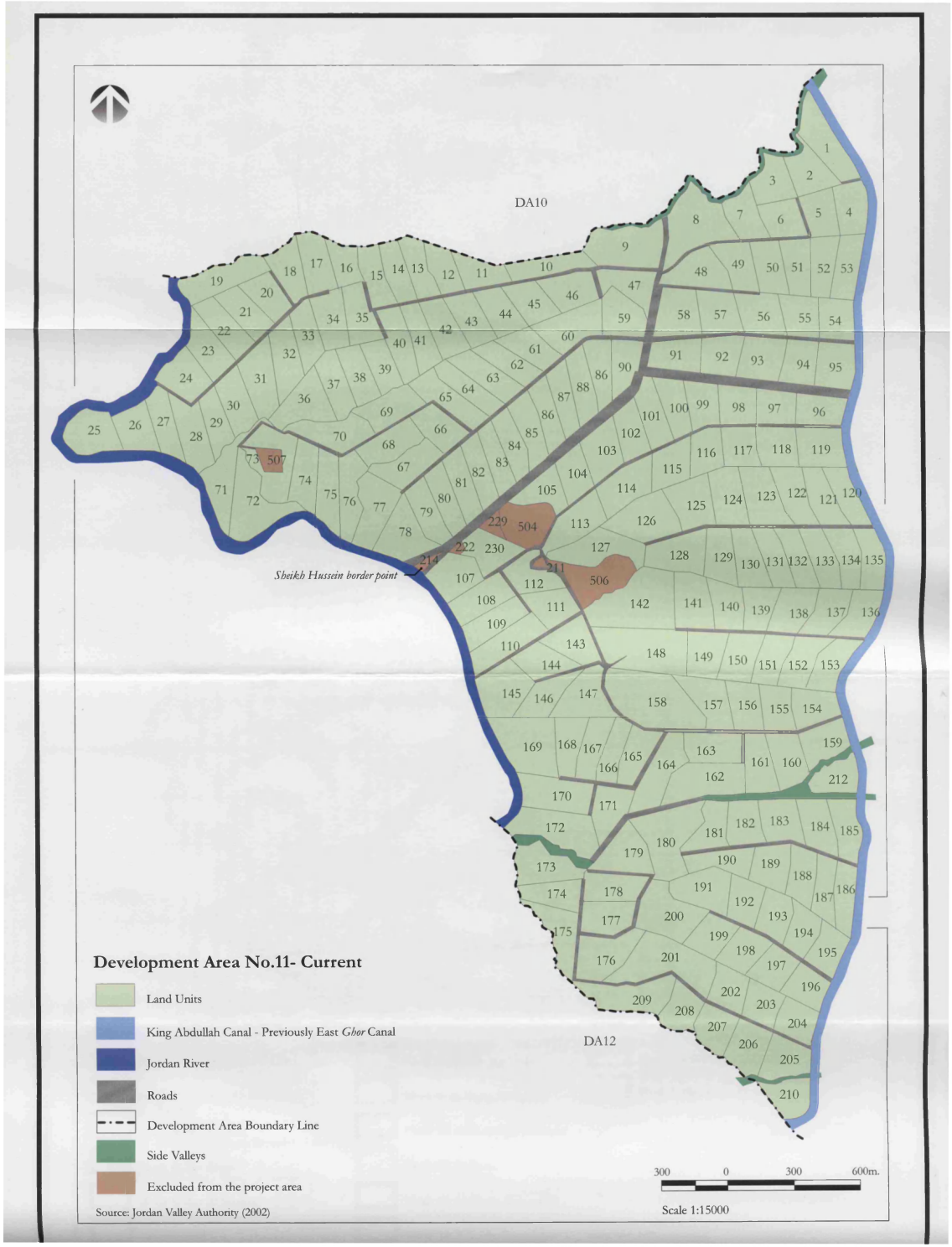

300 0 300 600m.
Scale 1:15000
Source: Jordan Valley Authority (2002)
DA9
Wadi Taybeh
Note: Unclosed block boundaries continue outside DA10
Old Village
Wadi Ziglab
DA11
Block 10: Al-Nahhas Al-Sharki in DA11
Development Area No.10 - Current
Village: Glai'at
Block 1: Tal Al-Arb'ein
Block 2: Glai'at Al-Janoubiyyeh
Block 4: Glai'at Al-Shamaliyyeh
Block 5: Abu Khalaf
Block 6: Al-Mirk
Block 8: Zor Abdullah Al-Shamali
Block 9: Zor Abdullah Al-Janoubi
Village: Al-Hamra (Continues in DA11)
Block 1: Al-Hamra Al-Shamaliyyeh
Block 2: Zor Al-Khazzanat
Block 3: Al-Hamra Al-Janoubiyyeh
Block 4: Iraq Addeik
Block 6: Zor Al-Barakeh
Block 7: Al-Zakkoukah
Block 8: Al-'Ain
Block 9: Al-Hamrah

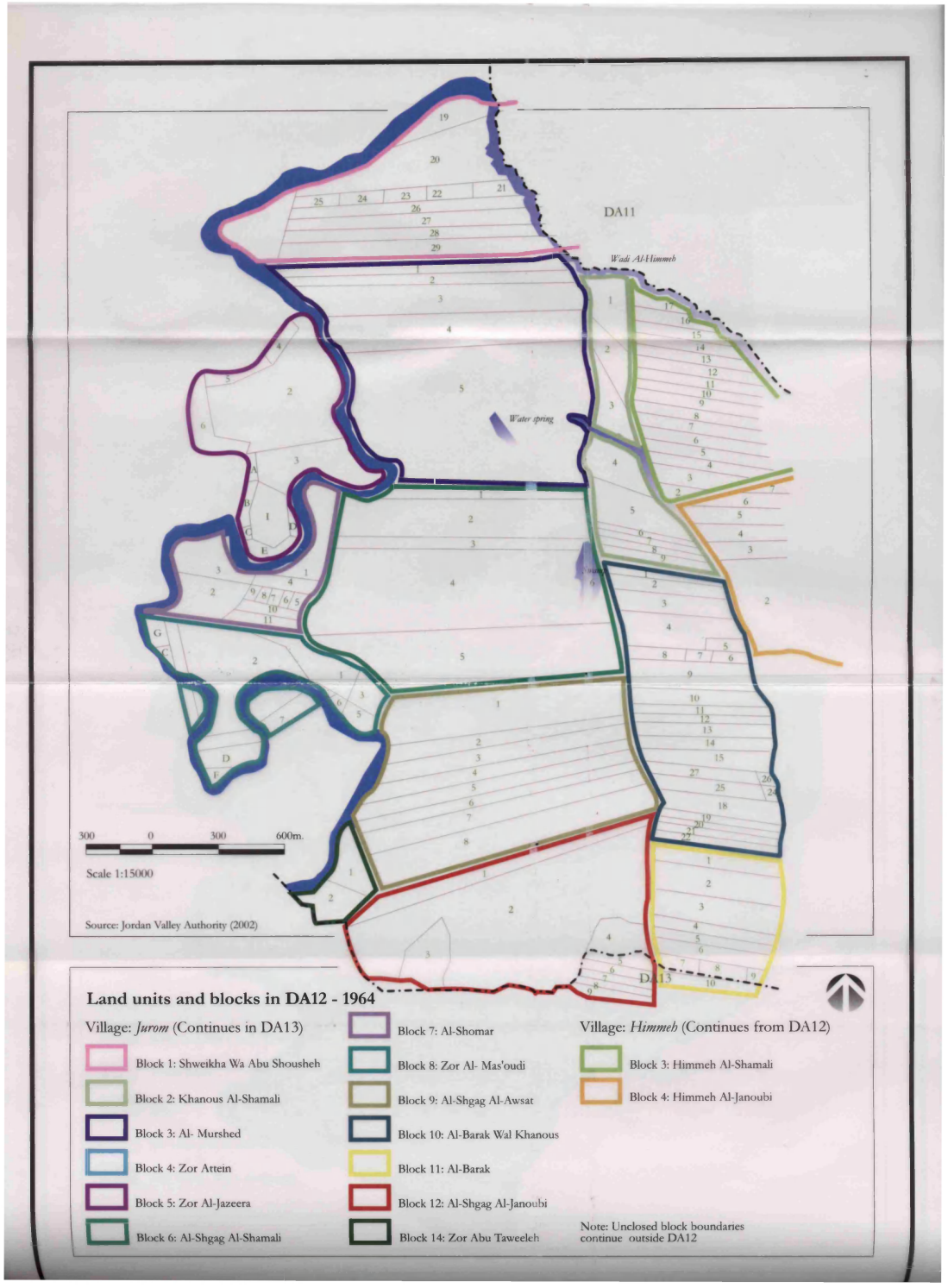

Scale 1:15000
Source: Jordan Valley Authority (2002)
DA9
Wadi Taybeh
Note: Unclosed block boundaries continue outside DA10
Old Village
Wadi Ziglab
DA11
Block 10: Al-Nahhas Al-Sharki in DA11
Development Area No.10 - Current
Village: Glai'at
Block 1: Tal Al-Arb'ein
Block 2: Glai'at Al-Janoubiyyeh
Block 4: Glai'at Al-Shamaliyyeh
Block 5: Abu Khalaf
Block 6: Al-Mirk
Block 8: Zor Abdullah Al-Shamali
Block 9: Zor Abdullah Al-Janoubi
Village: Al-Hamra (Continues in DA11)
Block 1: Al-Hamra Al-Shamaliyyeh
Block 2: Zor Al-Khazzanat
Block 3: Al-Hamra Al-Janoubiyyeh
Excluded from the project area
Block 4: Iraq Addeik
Block 6: Zor Al-Barakeh
Block 7: Al-Zakkoukah
Block 8: Al-'Ain
Block 9: Al-Hamrah

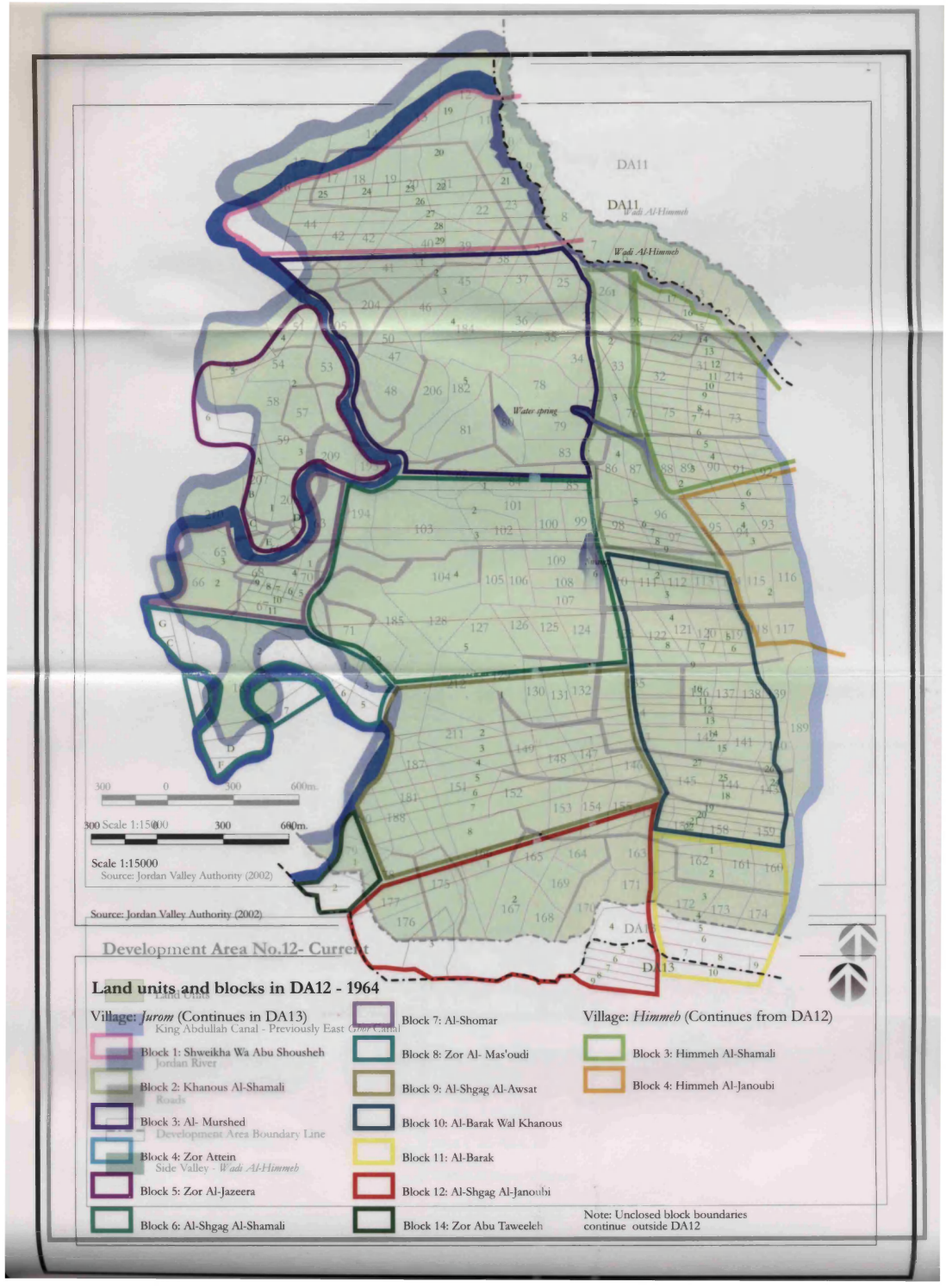

300 0 300 600m.
Scale 1:15000
Source: Jordan Valley Authority (2002)
DA9
DA11
Wadi Ziglab
Development Area No.10 - Current
Land Units
King Abdullah Canal - Previously East Ghor Canal
Jordan River
Roads
Development Area Boundary Line
Side Valleys
Excluded from the project area

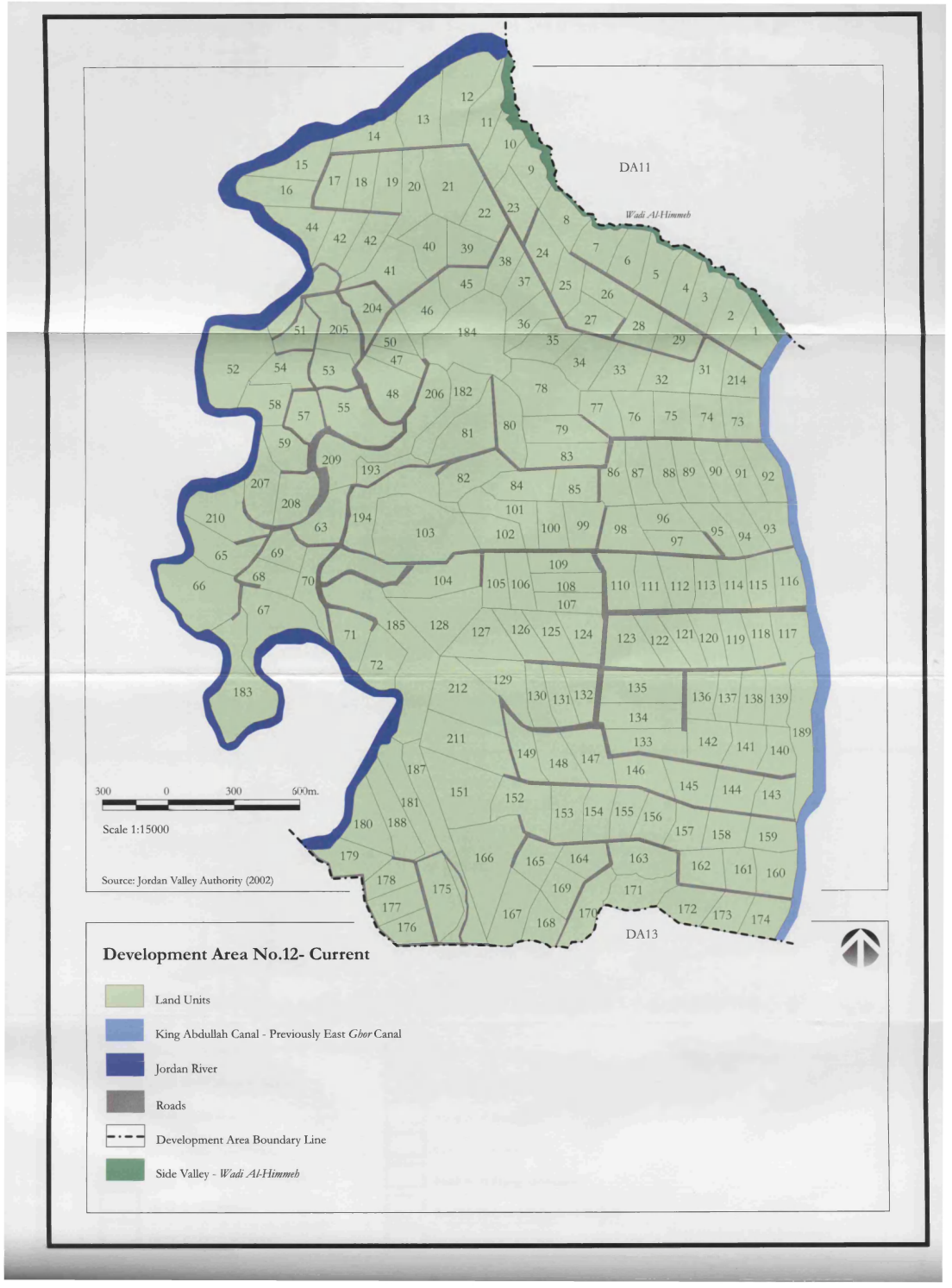

Land units and blocks in DA11 - 1964
Wadi Ziglab
DA10
DA12
Wadi Al-Jurom
Village: Hamra (Continues from DA10)
Block 10: Al-Nahhas Al-Sharki
Block 11: Al-Nahas Al-Gharbi
Village: Harrawiyyeh
Block 1: Harrawiyyeh
Block 2: Zor Al-'Areed
Village: Abu Zyad
Block 2: Abu Zyad Al-Shamali
Block 4: Al-'Akd Al-Gharbi
Block 7: Al-Rasanah
Block 8: Otol Al-Rasanah
Block 9: Abu Zyad Al-Wustah
Block 10: Al-Nabba'
Block 11: Al-Shgag
Block 13: Abu Zyad Al-Janoubi
Block 15: Al-Mahmouleh
Village: Himmeh (Continues in DA12)
Block 1: Al-Munkati'ah Al-Shamali
Block 2: Al-Munkati'ah Al-Janoubi
Block 3: Himmeh Al-Shamali
Village: Buseileh
Block 2: Buseileh Al-Shamali
Block 3: Buseileh Al-Janoubi
Block 5: Khirbet Al-Sheikh Muhammad Al-Shamali
Block 6: Khirbet Al-Sheikh Muhammad Al-Janoubi
Village: Jurom (Continues in DA12 & DA13)
Block 1: Shweikha Wa Abu Shousheh
300 0 300 600m.
Note: Unclosed block boundaries continue outside DA11
Scale 1:15000
Source: Jordan Valley Authority (2002)

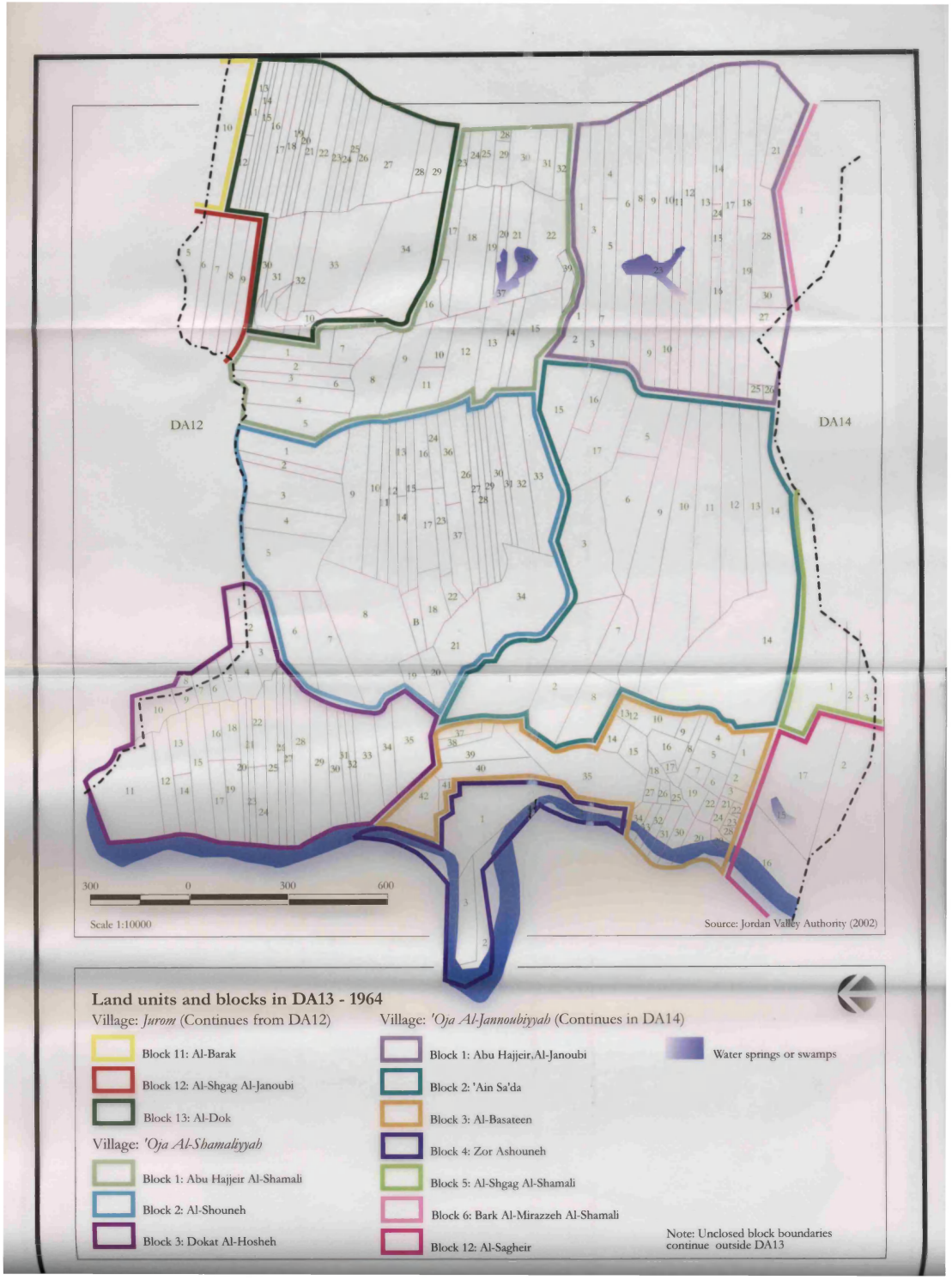

Land units and blocks in DA11 - 1964
DA10
DA10
DA12
Wadi Arjlah
Wadi Al-Jurom
Village: Hamra (Continues from DA10)
Block 10: Al-Nahhas Al-Sharki
Block 11: Al-Nahas Al-Gharbi
Village: Harrawiyyeh
Block 1: Harrawiyyeh
Block 2: Zor Al-'Areed
Village: Abu Zyad
Block 2: Abu Zyad Al-Shamali
Block 4: Al-'Akd Al-Gharbi
Block 7: Al-Rasanah
Block 8: Otol Al-Rasanah
Block 9: Abu Zyad Al-Wasrah
Block 10: Al-Nabba'
Block 11: Al-Shgag
Block 13: Abu Zyad Al-Janoubi
Block 15: Al-Mahmouleh
Village: Himmeh (Continues in DA12)
Block 1: Al-Munkati'ah Al-Shamali
Block 2: Al-Munkati'ah Al-Janoubi
Block 3: Himmeh Al-Shamali
Village: Buseileh
Block 2: Buseileh Al-Shamali
Block 3: Buseileh Al-Janoubi
Block 5: Khirbet Al-Sheikh Muhammad Al-Shamali
Block 6: Khirbet Al-Sheikh Muhammad Al-Janoubi
Village: Jurom (Continues in DA12 & DA13)
Block 1: Shweikha Wa Abu Shousheh
Note: Unclosed block boundaries continue outside DA11
Source: Jordan Valley Authority (2002)
300 0 300 600m.
Scale 1:15000

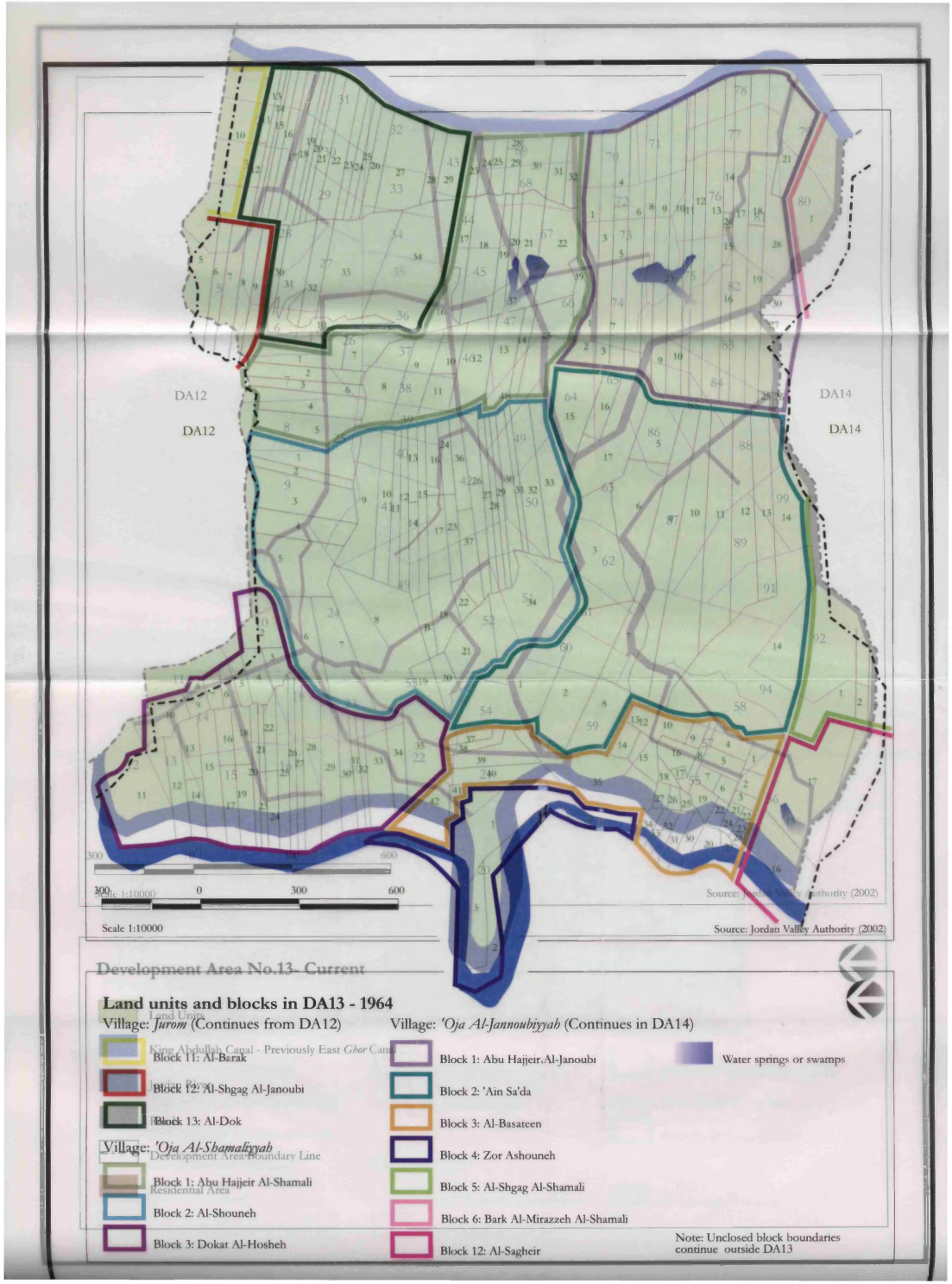

DA10
DA12
Sheikh Hussein border point
Development Area No.11- Current
Land Units
King Abdullah Canal - Previously East Ghor Canal
Jordan River
Roads
Development Area Boundary Line
Side Valleys
Excluded from the project area
Source: Jordan Valley Authority (2002)
300 0 300 600m.
Scale 1:15000

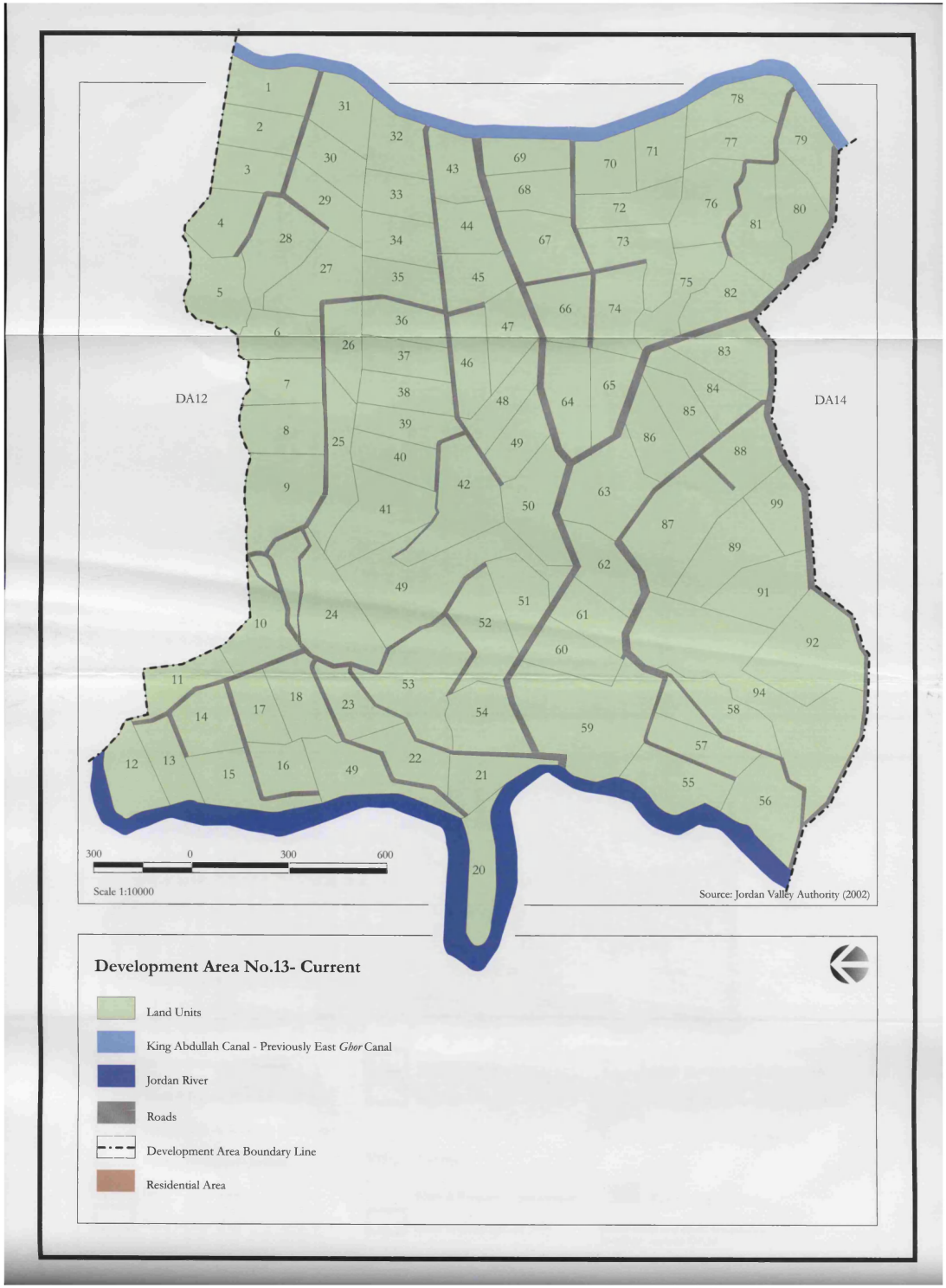

DA11
Wadi Al-Himmeh
Water spring
DA13
300 0 300 600m.
Scale 1:15000
Source: Jordan Valley Authority (2002)
Land units and blocks in DA12 - 1964
Village: Jurom (Continues in DA13)
Block 1: Shweikha Wa Abu Shousheh
Block 2: Khanous Al-Shamali
Block 3: Al- Murshed
Block 4: Zor Attein
Block 5: Zor Al-Jazeera
Block 6: Al-Shgag Al-Shamali
Block 7: Al-Shomar
Block 8: Zor Al- Mas'oudi
Block 9: Al-Shgag Al-Awsat
Block 10: Al-Barak Wal Khanous
Block 11: Al-Barak
Block 12: Al-Shgag Al-Janoubi
Block 14: Zor Abu Taweeleh
Village: Himmeh (Continues from DA12)
Block 3: Himmeh Al-Shamali
Block 4: Himmeh Al-Janoubi
Note: Unclosed block boundaries continue outside DA12

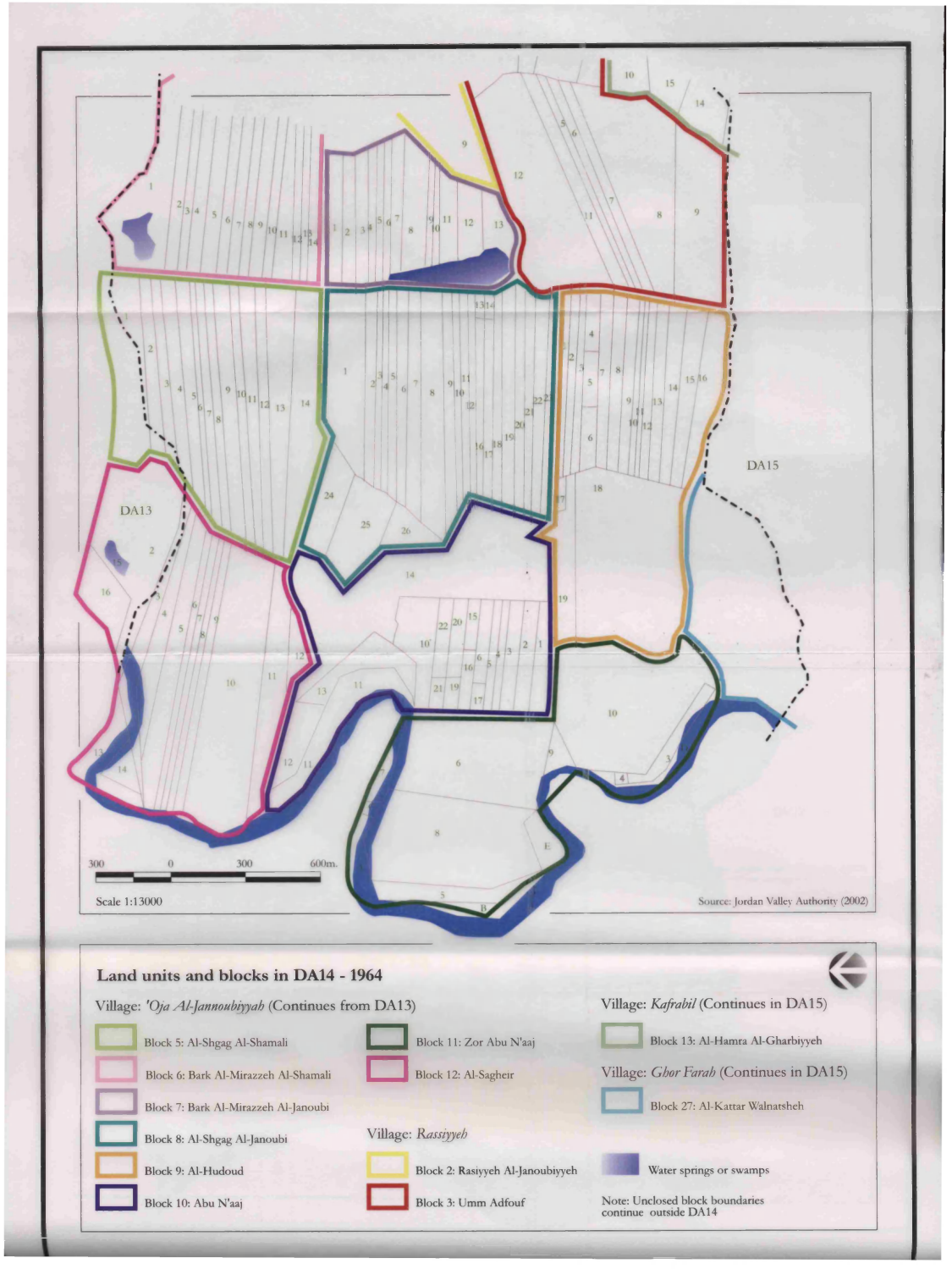

DA11
DA11
Wadi Al-Himmeh
Wadi Al-Himmeh
Water spring
300 0 300 600m.
300 Scale 1:15000 300 600m.
Scale 1:15000
Source: Jordan Valley Authority (2002)
Source: Jordan Valley Authority (2002)
Development Area No.12- Current
DA13
Land Units
King Abdullah Canal - Previously East Ghor Canal
Jordan River
Roads
Development Area Boundary Line
Side Valley - Wadi Al-Himmeh
Land units and blocks in DA12 - 1964
Village: Jurom (Continues in DA13)
Block 1: Shweikha Wa Abu Shousheh
Block 2: Khanous Al-Shamali
Block 3: Al- Murshed
Block 4: Zor Attein
Block 5: Zor Al-Jazeera
Block 6: Al-Shgag Al-Shamali
Block 7: Al-Shomar
Block 8: Zor Al- Mas'oudi
Block 9: Al-Shgag Al-Awsat
Block 10: Al-Barak Wal Khanous
Block 11: Al-Barak
Block 12: Al-Shgag Al-Janoubi
Block 14: Zor Abu Taweeleh
Village: Himmeh (Continues from DA12)
Block 3: Himmeh Al-Shamali
Block 4: Himmeh Al-Janoubi
Note: Unclosed block boundaries continue outside DA12

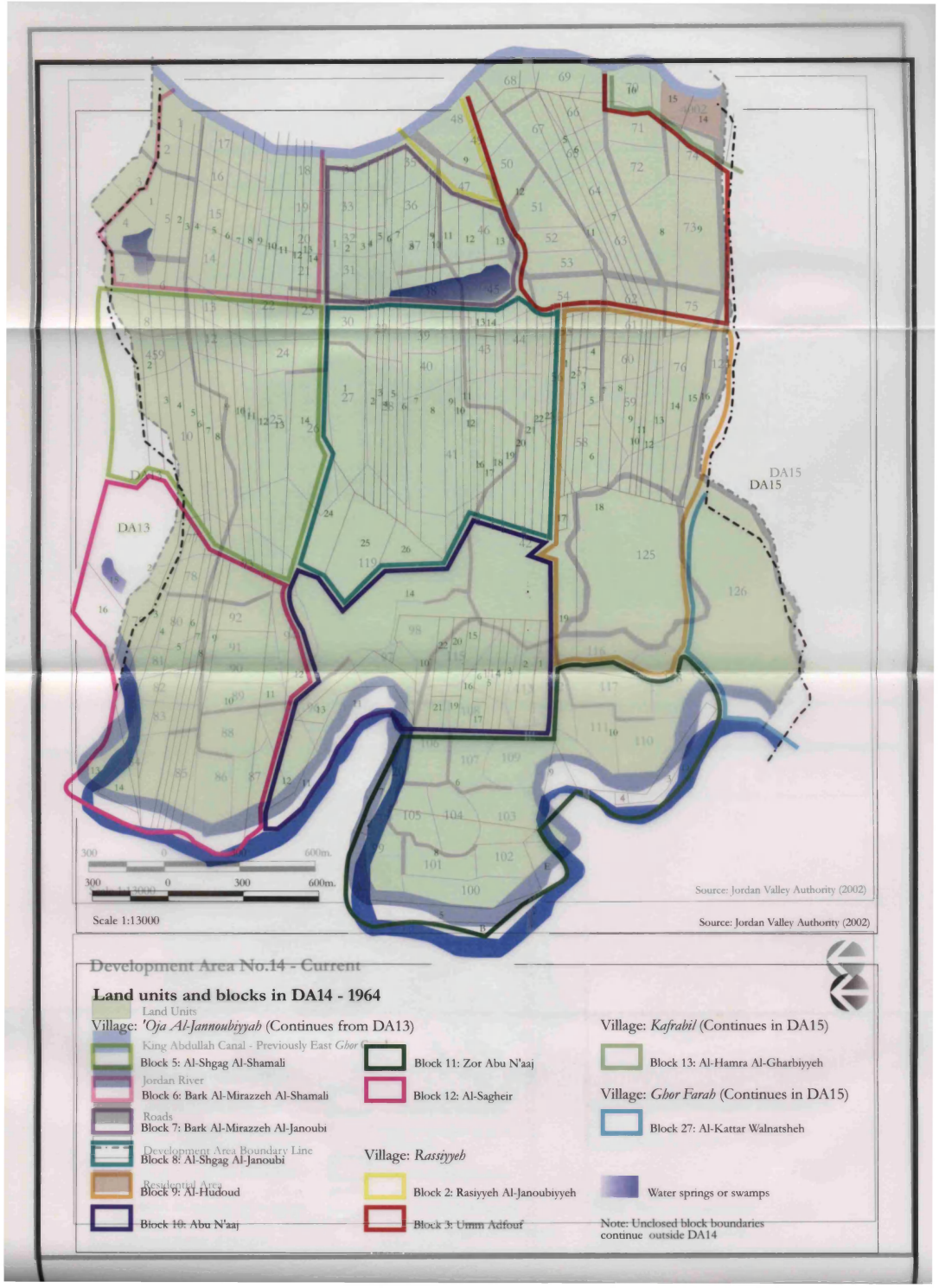

DA11
Wadi Al-Himmeh
DA13
300 0 300 600m.
Scale 1:15000
Source: Jordan Valley Authority (2002)
Development Area No.12- Current
Land Units
King Abdullah Canal - Previously East Ghor Canal
Jordan River
Roads
Development Area Boundary Line
Side Valley - Wadi Al-Himmeh

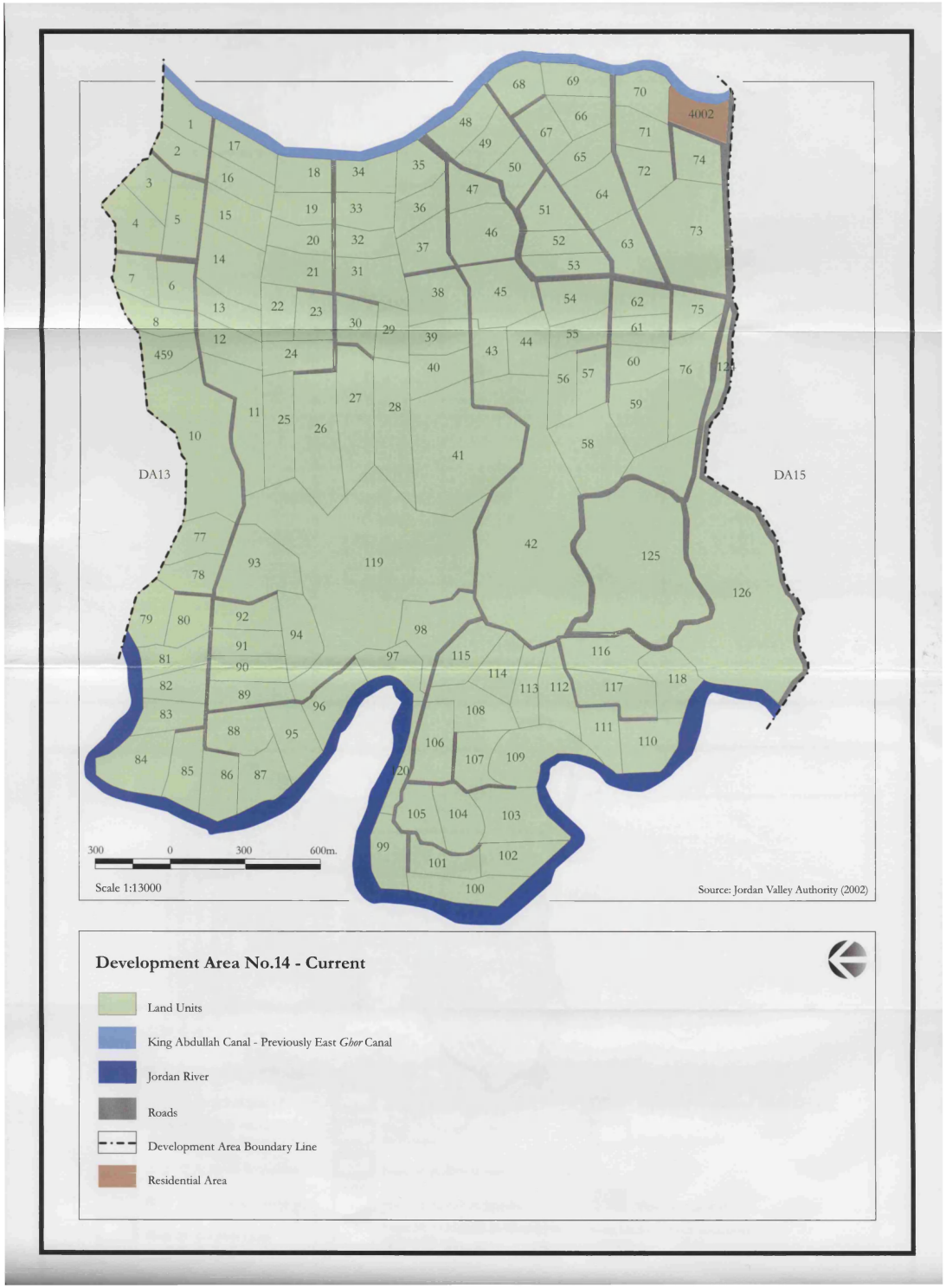

DA12
DA14
300 0 300 600
Scale 1:10000
Source: Jordan Valley Authority (2002)
Land units and blocks in DA13 - 1964
Village: Jurom (Continues from DA12)
Block 11: Al-Barak
Block 12: Al-Shgag Al-Janoubi
Block 13: Al-Dok
Village: 'Oja Al-Shamaliyyah
Block 1: Abu Hajjeir Al-Shamali
Block 2: Al-Shouneh
Block 3: Dokat Al-Hosheh
Village: 'Oja Al-Jannoubiyyah (Continues in DA14)
Block 1: Abu Hajjeir,Al-Janoubi
Block 2: 'Ain Sa'da
Block 3: Al-Basateen
Block 4: Zor Ashouneh
Block 5: Al-Shgag Al-Shamali
Block 6: Bark Al-Mirazzeh Al-Shamali
Block 12: Al-Sagheir
Water springs or swamps
Note: Unclosed block boundaries continue outside DA13

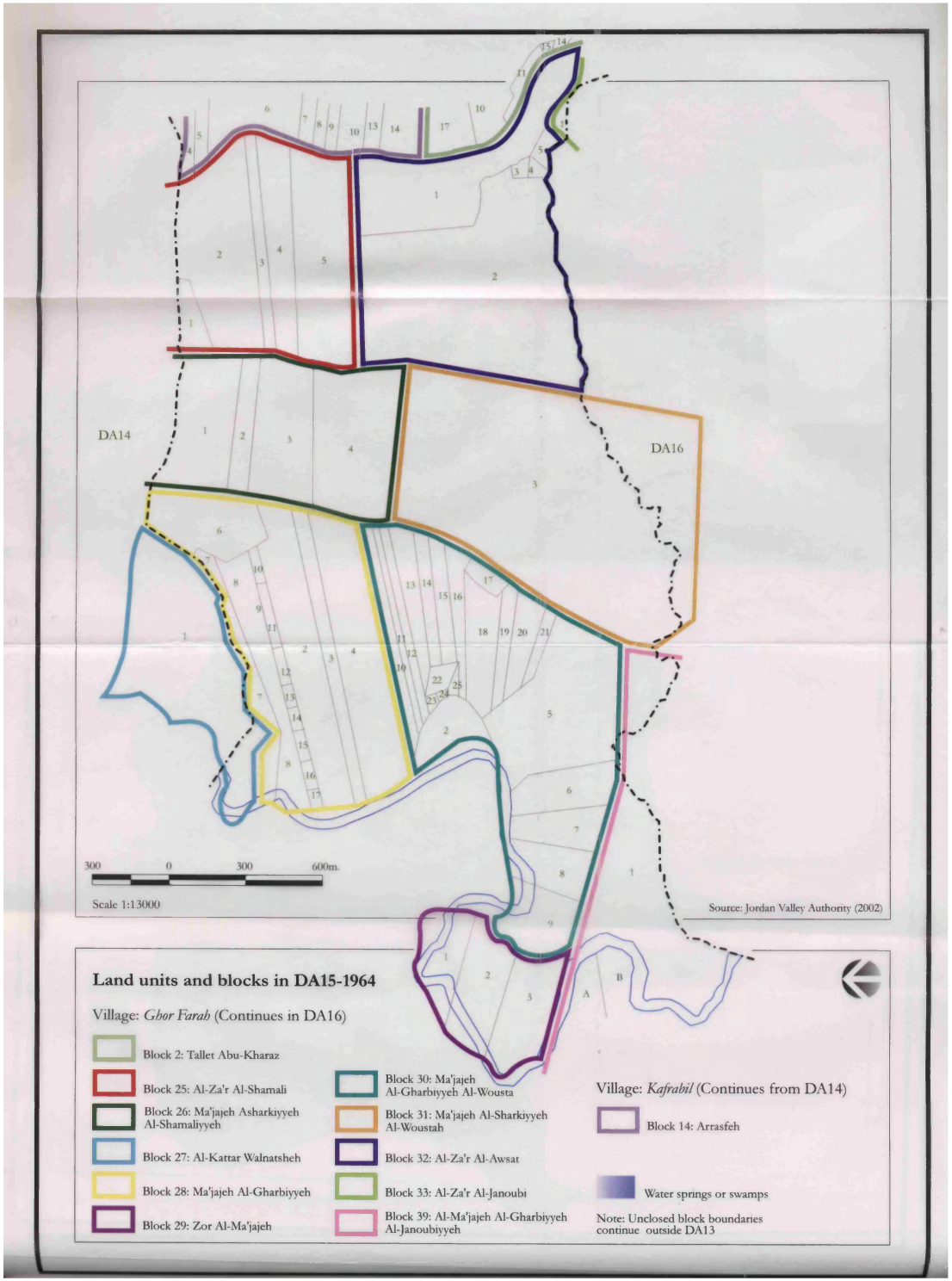

DA12
DA12
DA14
DA14
300
600
300 0 300 600
Scale 1:10000
Source: Jordan Valley Authority (2002)
Development Area No.13- Current
Land Units
King Abdullah Canal - Previously East Ghor Canal
Irrigation Pipeline
Drainage Pipeline
Development Area Boundary Line
Residential Area
Land units and blocks in DA13 - 1964
Village: Jurom (Continues from DA12)
Block 11: Al-Barak
Block 12: Al-Shgag Al-Janoubi
Block 13: Al-Dok
Village: 'Oja Al-Shamaliyyah
Block 1: Abu Hajjeir Al-Shamali
Block 2: Al-Shouneh
Block 3: Dokat Al-Hosheh
Village: 'Oja Al-Jannoubiyyah (Continues in DA14)
Block 1: Abu Hajjeir Al-Janoubi
Block 2: 'Ain Sa'da
Block 3: Al-Basateen
Block 4: Zor Ashouneh
Block 5: Al-Shgag Al-Shamali
Block 6: Bark Al-Mirazzeh Al-Shamali
Block 12: Al-Sagheir
Water springs or swamps
Note: Unclosed block boundaries continue outside DA13

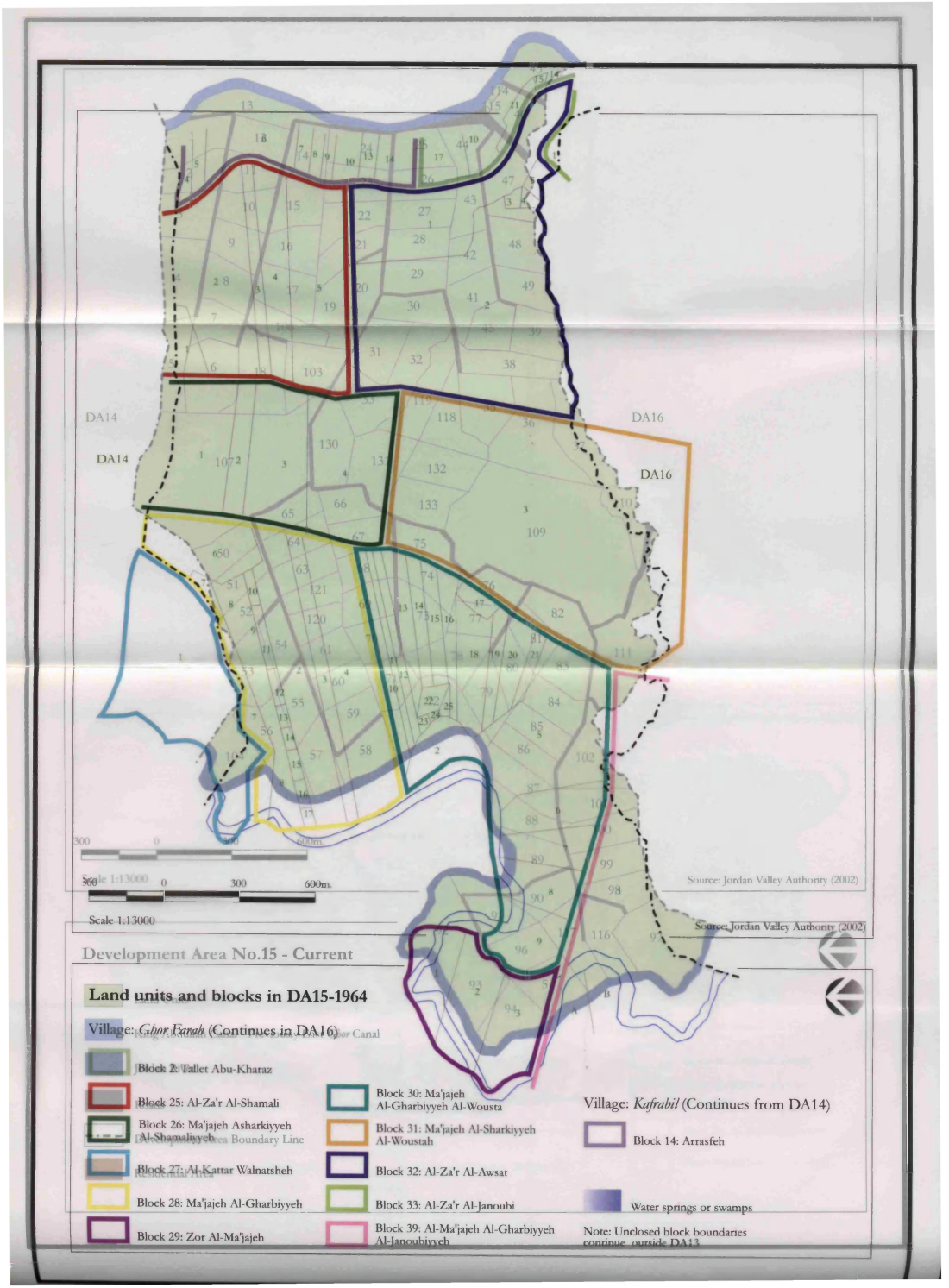

DA12
DA14
300
0
300
600
Scale 1:10000
Source: Jordan Valley Authority (2002)
Development Area No.13- Current
Land Units
King Abdullah Canal - Previously East Ghor Canal
Jordan River
Roads
Development Area Boundary Line
Residential Area

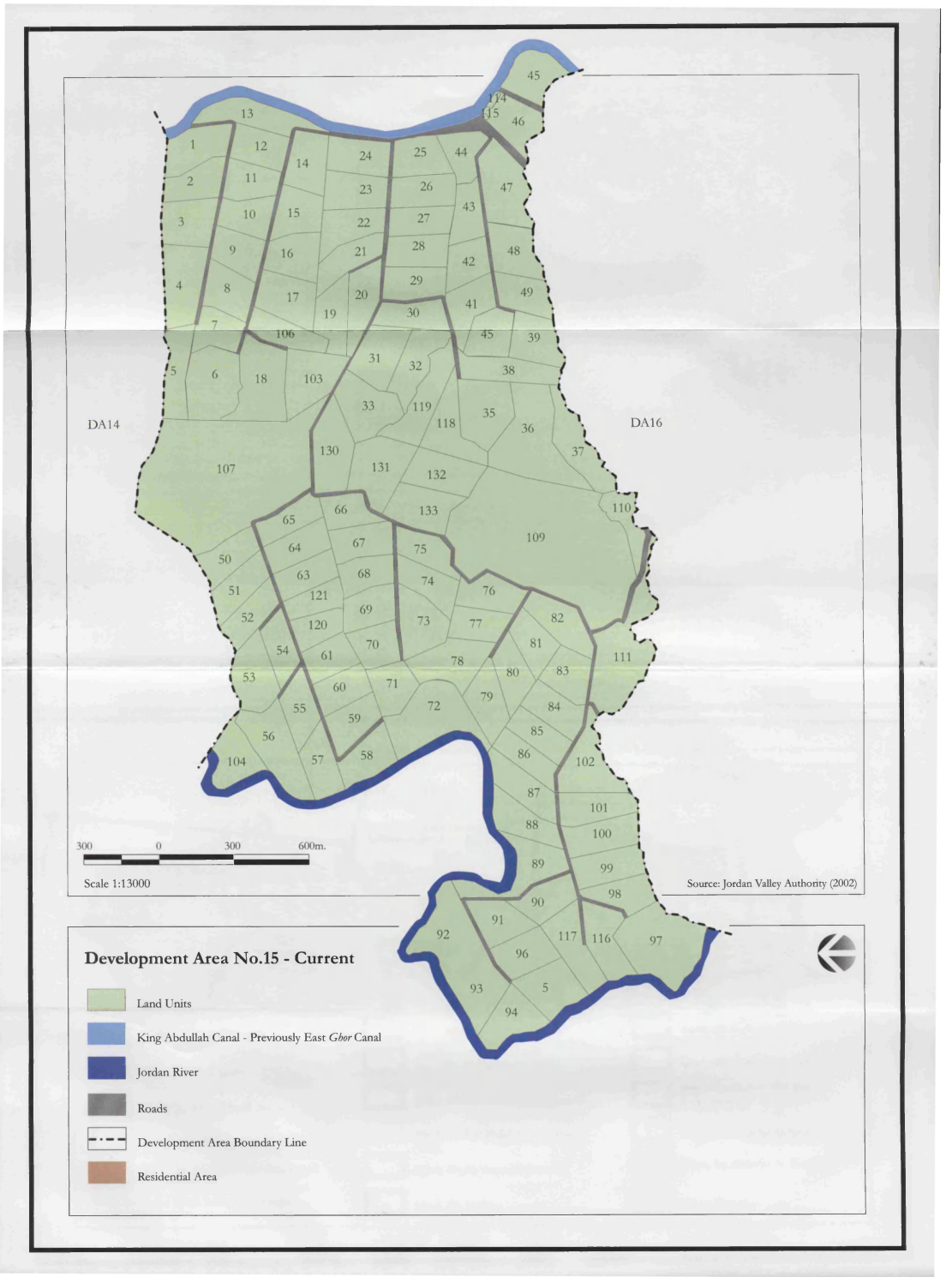

DA13
DA15
300 0 300 600m.
Scale 1:13000
Source: Jordan Valley Authority (2002)
Land units and blocks in DA14 - 1964
Village: 'Oja Al-Jannoubiyyah (Continues from DA13)
Block 5: Al-Shgag Al-Shamali
Block 6: Bark Al-Mirazzeh Al-Shamali
Block 7: Bark Al-Mirazzeh Al-Janoubi
Block 8: Al-Shgag Al-Janoubi
Block 9: Al-Hudoud
Block 10: Abu N'aaj
Block 11: Zor Abu N'aaj
Block 12: Al-Sagheir
Village: Rassiyyeh
Block 2: Rasiyyeh Al-Janoubiyyeh
Block 3: Umm Adfouf
Village: Kafrabil (Continues in DA15)
Block 13: Al-Hamra Al-Gharbiyyeh
Village: Ghor Farah (Continues in DA15)
Block 27: Al-Kattar Walnatsheh
Water springs or swamps
Note: Unclosed block boundaries continue outside DA14

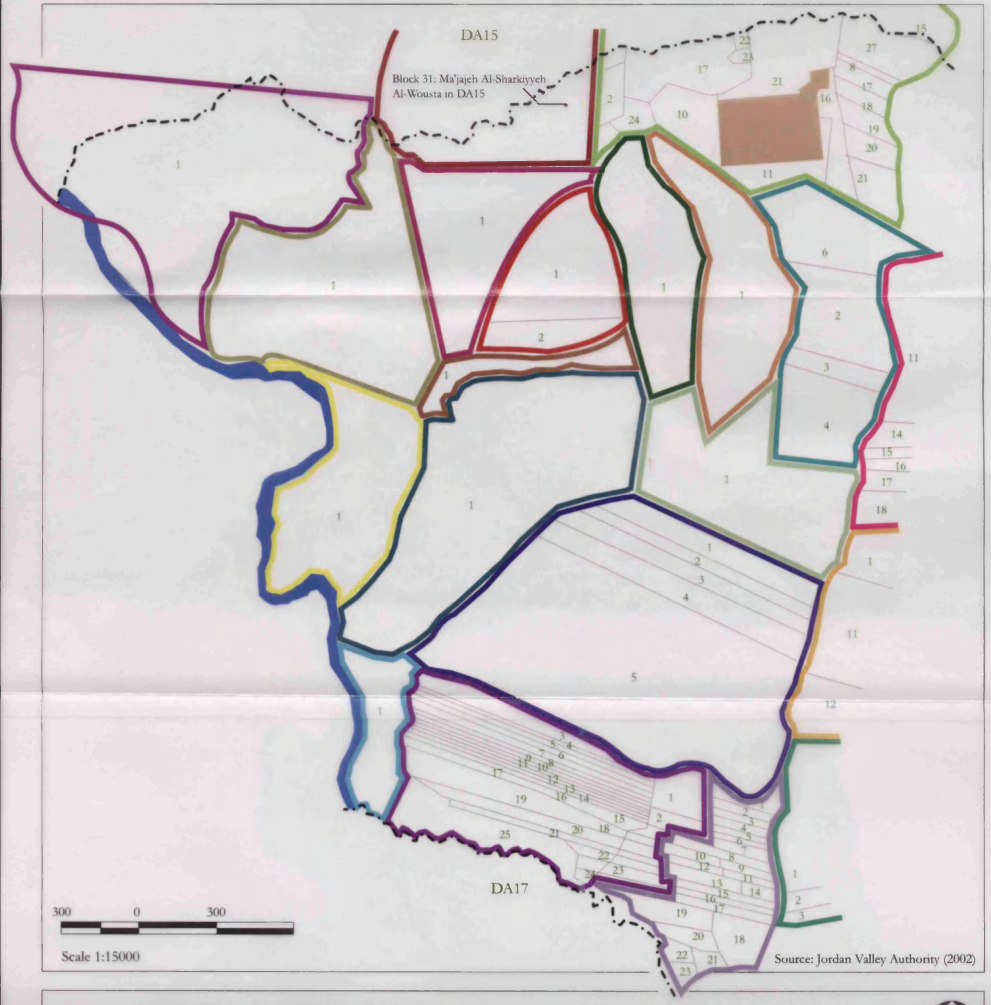

DA13
DA15
DA15
300 0 300 600m.
Scale 1:13000
Source: Jordan Valley Authority (2002)
Development Area No.14 - Current
Land units and blocks in DA14 - 1964
Land Units
Village: 'Oja Al-Jannoubiyyah (Continues from DA13)
King Abdullah Canal - Previously East Ghor Canal
Block 5: Al-Shgag Al-Shamali
Jordan River
Block 6: Bark Al-Mirazzeh Al-Shamali
Roads
Block 7: Bark Al-Mirazzeh Al-Janoubi
Development Area Boundary Line
Block 8: Al-Shgag Al-Janoubi
Residential Area
Block 9: Al-Hudoud
Block 10: Abu N'aaj
Block 11: Zor Abu N'aaj
Block 12: Al-Sagheir
Village: Rassiyyeh
Block 2: Rasiyyeh Al-Janoubiyyeh
Block 3: Umm Adfour
Village: Kafrabil (Continues in DA15)
Block 13: Al-Hamra Al-Gharbiyyeh
Village: Ghor Farah (Continues in DA15)
Block 27: Al-Kattar Walnatsheh
Water springs or swamps
Note: Unclosed block boundaries continue outside DA14


DA13
DA15
4002
459
300 0 300 600m.
Scale 1:13000
Source: Jordan Valley Authority (2002)
Development Area No.14 - Current
Land Units
King Abdullah Canal - Previously East *Ghor* Canal
Jordan River
Roads
Development Area Boundary Line
Residential Area


DA14
DA16
300 0 300 600m.
Scale 1:13000
Source: Jordan Valley Authority (2002)
Land units and blocks in DA15-1964
Village: Ghor Farah (Continues in DA16)
Block 2: Tallet Abu-Kharaz
Block 25: Al-Za'r Al-Shamali
Block 26: Ma'jajeh Asharkiyyeh Al-Shamaliyyeh
Block 27: Al-Kattar Walnatsheh
Block 28: Ma'jajeh Al-Gharbiyyeh
Block 29: Zor Al-Ma'jajeh
Block 30: Ma'jajeh Al-Gharbiyyeh Al-Wousta
Block 31: Ma'jajeh Al-Sharkiyyeh Al-Woustah
Block 32: Al-Za'r Al-Awsat
Block 33: Al-Za'r Al-Janoubi
Block 39: Al-Ma'jajeh Al-Gharbiyyeh Al-Janoubiyyeh
Village: Kafrabil (Continues from DA14)
Block 14: Arrasfeh
Water springs or swamps
Note: Unclosed block boundaries continue outside DA13


DA14
DA14
DA16
DA16
300 0 300 600m.
Scale 1:13000
Source: Jordan Valley Authority (2002)
Development Area No.15 - Current
Land units and blocks in DA15-1964
Village: Ghor Farah (Continues in DA16)
Block 2: Tallet Abu-Kharaz
Block 25: Al-Za'r Al-Shamali
Block 26: Ma'jajeh Asharkiyyeh Al-Shamaliyyeh
Block 27: Al-Kattar Walnatsheh
Block 28: Ma'jajeh Al-Gharbiyyeh
Block 29: Zor Al-Ma'jajeh
Block 30: Ma'jajeh Al-Gharbiyyeh Al-Wousta
Block 31: Ma'jajeh Al-Sharkiyyeh Al-Woustah
Block 32: Al-Za'r Al-Awsat
Block 33: Al-Za'r Al-Janoubi
Block 39: Al-Ma'jajeh Al-Gharbiyyeh Al-Janoubiyyeh
Village: Kafrabil (Continues from DA14)
Block 14: Arrasfeh
Water springs or swamps
Note: Unclosed block boundaries continue outside DA13


DA14
DA16
300 0 300 600m.
Scale 1:13000
Source: Jordan Valley Authority (2002)
Development Area No.15 - Current
Land Units
King Abdullah Canal - Previously East Ghor Canal
Jordan River
Roads
Development Area Boundary Line
Residential Area

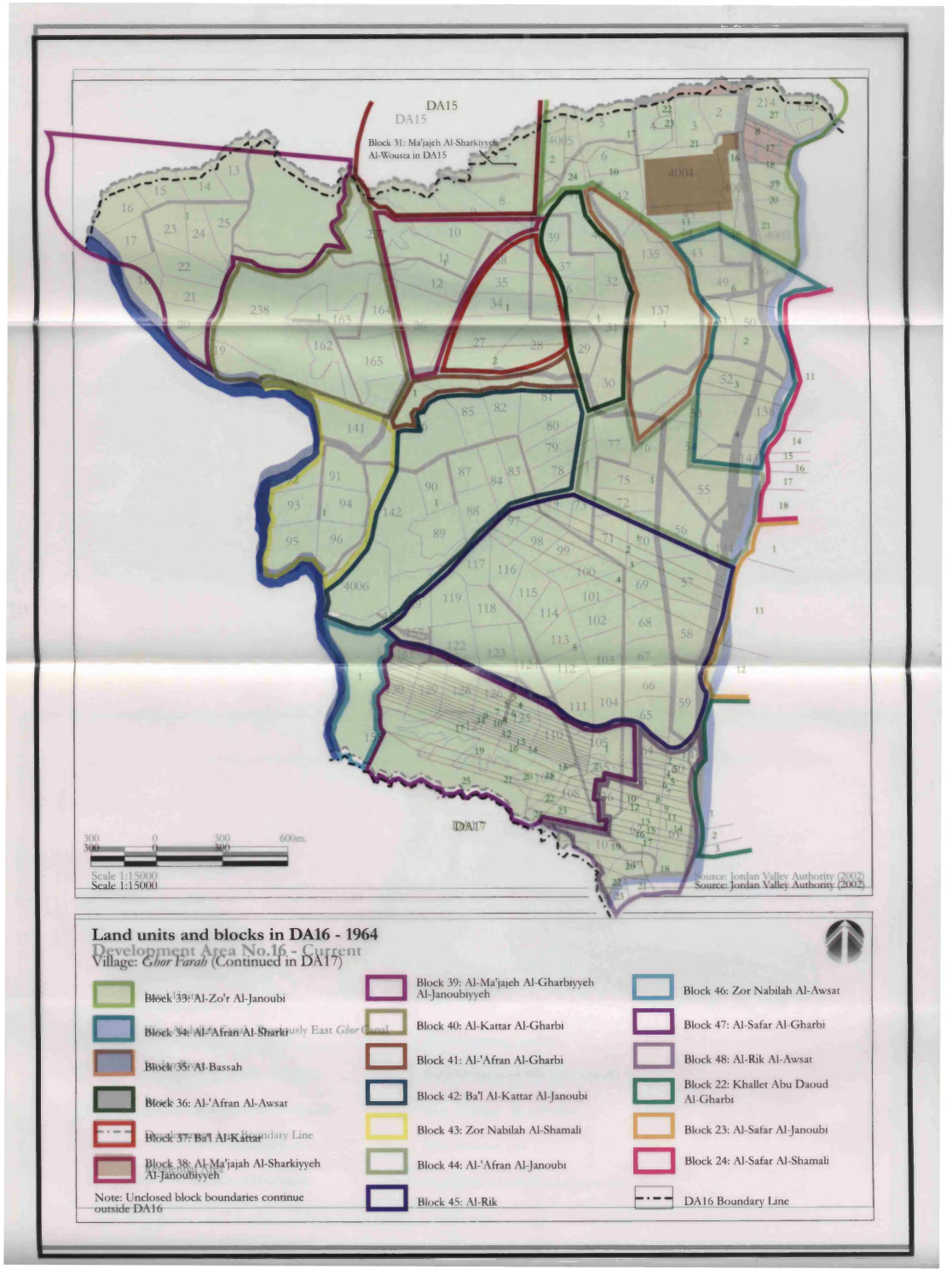


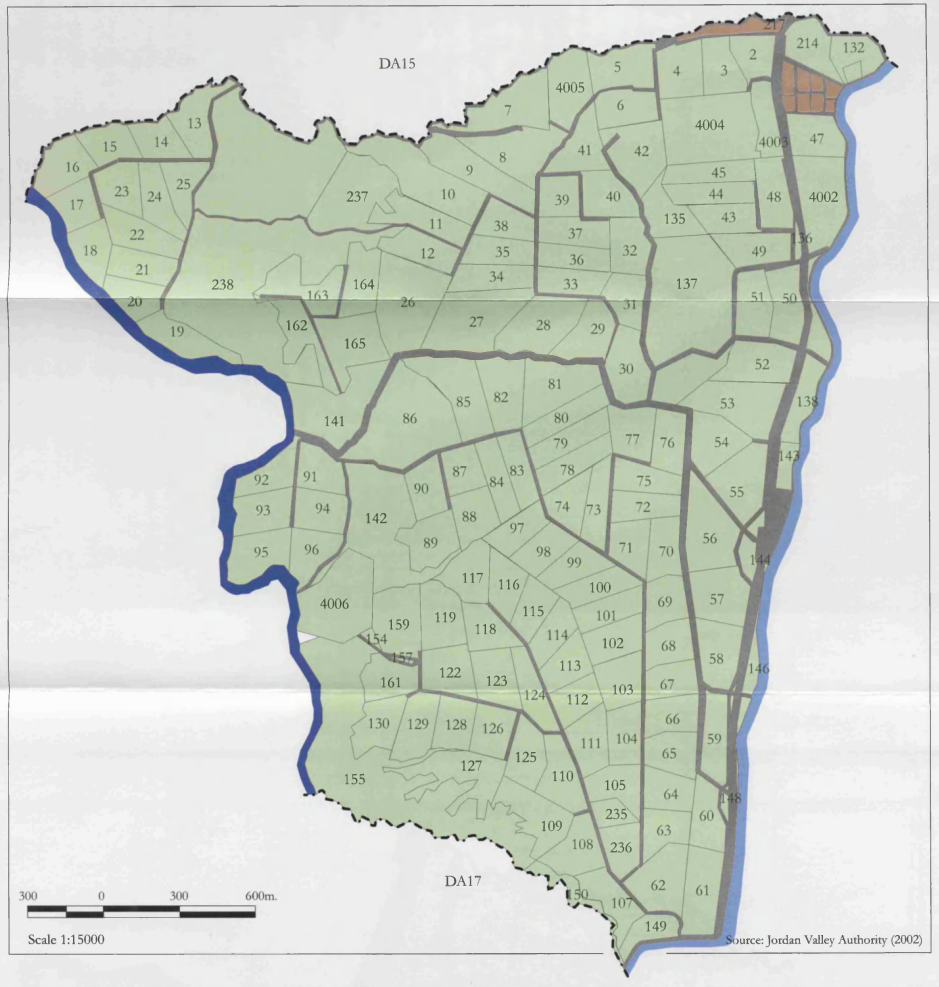
Land units and blocks in DA16 - 1964

Village: *Ghor Farah* (Continued in DA17)

- Block 33: Al-Zo'r Al-Janoubi
- Block 34: Al-'Afran Al-Sharki
- Block 35: Al-Bassah
- Block 36: Al-'Afran Al-Awsat
- Block 37: Ba'l Al-Kattar
- Block 38: Al-Ma'jajah Al-Sharkiyyeh Al-Janoubiyyeh
- Block 39: Al-Ma'jajeh Al-Gharbiyyeh Al-Janoubiyyeh
- Block 40: Al-Kattar Al-Gharbi
- Block 41: Al-'Afran Al-Gharbi
- Block 42: Ba'l Al-Kattar Al-Janoubi
- Block 43: Zor Nabilah Al-Shamali
- Block 44: Al-'Afran Al-Janoubi
- Block 45: Al-Rik
- Block 46: Zor Nabilah Al-Awsat
- Block 47: Al-Safar Al-Gharbi
- Block 48: Al-Rik Al-Awsat
- Block 22: Khallet Abu Daoud Al-Gharbi
- Block 23: Al-Safar Al-Janoubi
- Block 24: Al-Safar Al-Shamali
- DA16 Boundary Line

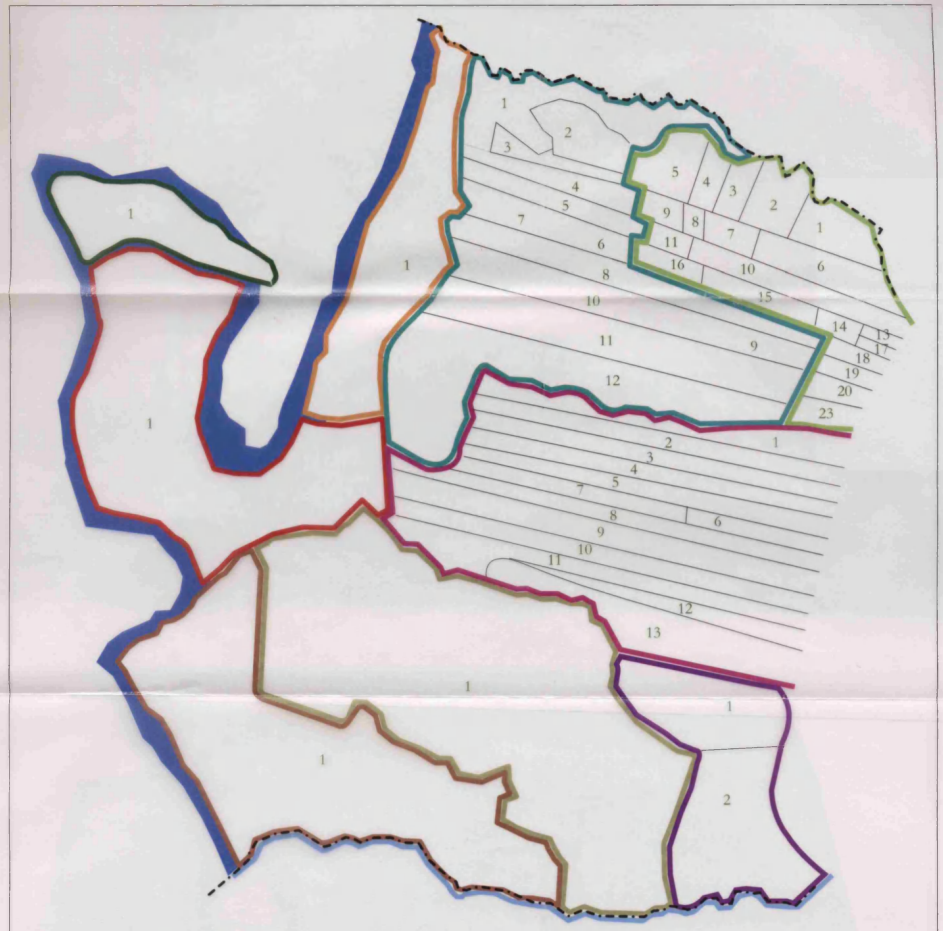
Note: Unclosed block boundaries continue outside DA16


DA15
DA15
Block 31: Ma'jajeh Al-Sharkiyyeh Al-Wousta in DA15
DA17
300 0 300 600m.
Scale 1:15000
Scale 1:15000
Source: Jordan Valley Authority (2002)
Source: Jordan Valley Authority (2002)
Land units and blocks in DA16 - 1964
Development Area No.16 - Current
Village: Ghor Farah (Continued in DA17)
Block 33: Al-Zo'r Al-Janoubi
Block 34: Al-'Afran Al-Sharki
Block 35: Al-Bassah
Block 36: Al-'Afran Al-Awsat
Block 37: Ba'l Al-Kattar
Block 38: Al-Ma'jajah Al-Sharkiyyeh Al-Janoubiyyeh
Block 39: Al-Ma'jajeh Al-Gharbiyyeh Al-Janoubiyyeh
Block 40: Al-Kattar Al-Gharbi
Block 41: Al-'Afran Al-Gharbi
Block 42: Ba'l Al-Kattar Al-Janoubi
Block 43: Zor Nabilah Al-Shamali
Block 44: Al-'Afran Al-Janoubi
Block 45: Al-Rik
Block 46: Zor Nabilah Al-Awsat
Block 47: Al-Safar Al-Gharbi
Block 48: Al-Rik Al-Awsat
Block 22: Khallet Abu Daoud Al-Gharbi
Block 23: Al-Safar Al-Janoubi
Block 24: Al-Safar Al-Shamali
DA16 Boundary Line
Note: Unclosed block boundaries continue outside DA16



Development Area No.16 - Current

- Land Units
- King Abdullah Canal - Previously East *Ghor* Canal
- Jordan River
- Roads
- Development Area Boundary Line
- Residential Area



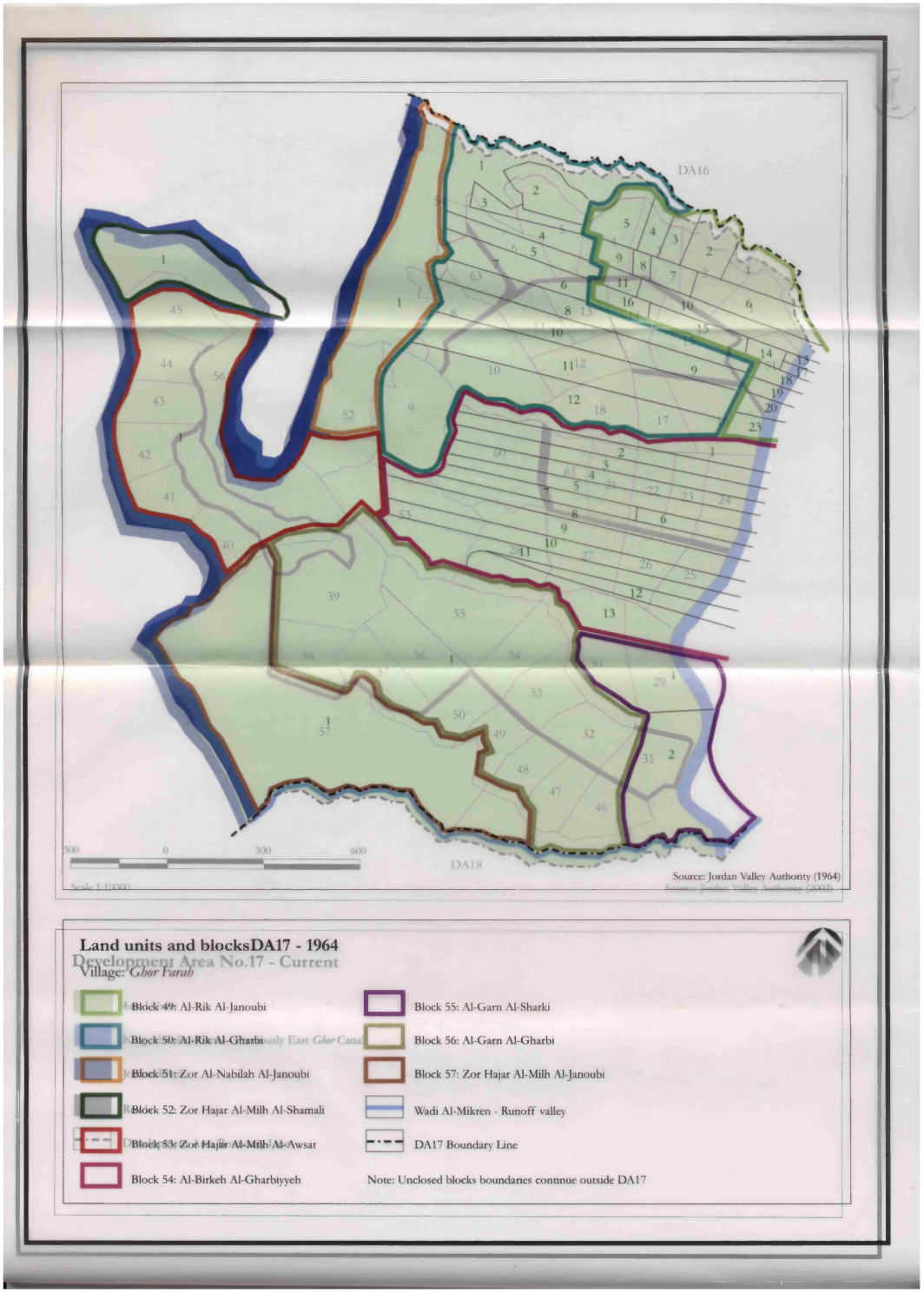
Source: Jordan Valley Authority (1964)

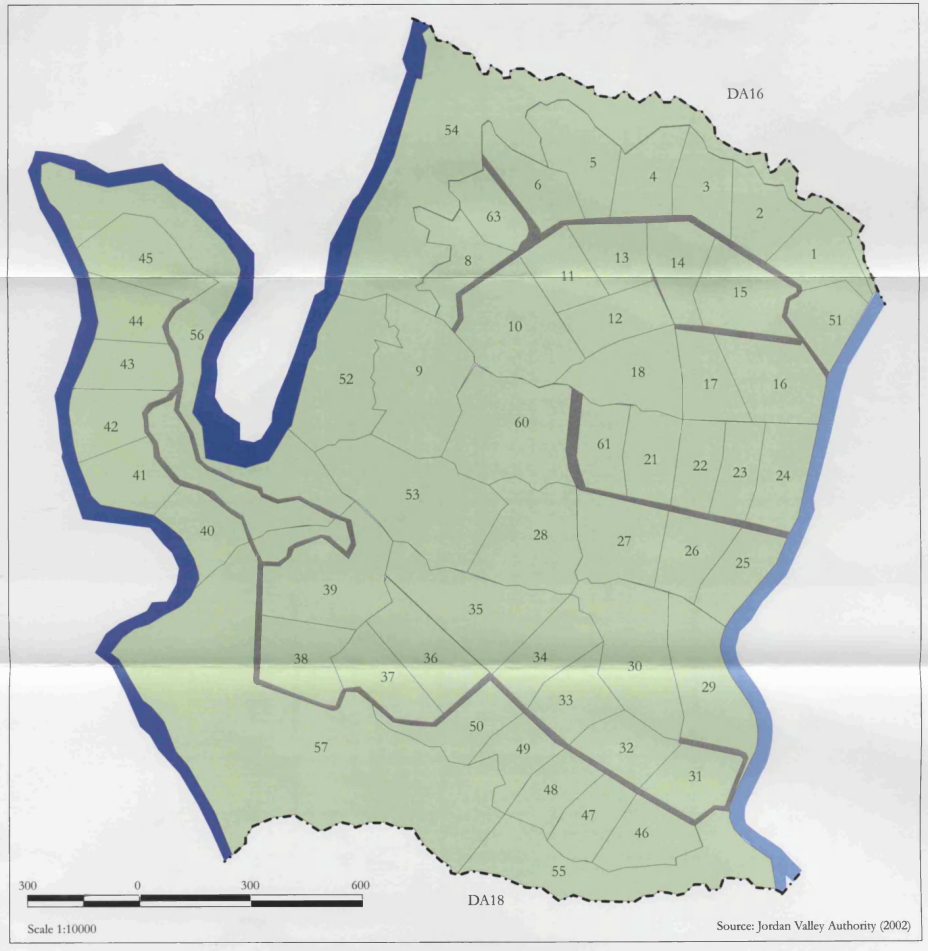
Land units and blocksDA17 - 1964

Village: *Ghor Farah*

- Block 49: Al-Rik Al-Janoubi
- Block 50: Al-Rik Al-Gharbi
- Block 51: Zor Al-Nabilah Al-Janoubi
- Block 52: Zor Hajar Al-Milh Al-Shamali
- Block 53: Zor Hajar Al-Milh Al-Awsat
- Block 54: Al-Birkeh Al-Gharbiyyeh
- Block 55: Al-Garn Al-Sharki
- Block 56: Al-Garn Al-Gharbi
- Block 57: Zor Hajar Al-Milh Al-Janoubi
- Wadi Al-Mikren - Runoff valley
- DA17 Boundary Line

Note: Unclosed blocks boundaries continue outside DA17


DA16
DA18
300 0 300 600
Source: Jordan Valley Authority (1964)
Land units and blocksDA17 - 1964
Development Area No.17 - Current
Village: Ghor Farah
Block 49: Al-Rik Al-Janoubi
Block 50: Al-Rik Al-Gharbi
Block 51: Zor Al-Nabilah Al-Janoubi
Block 52: Zor Hajar Al-Milh Al-Shamali
Block 53: Zor Hajar Al-Milh Al-Awsat
Block 54: Al-Birkeh Al-Gharbiyyeh
Block 55: Al-Garn Al-Sharki
Block 56: Al-Garn Al-Gharbi
Block 57: Zor Hajar Al-Milh Al-Janoubi
Wadi Al-Mikren - Runoff valley
DA17 Boundary Line
Note: Unclosed blocks boundaries continue outside DA17



Development Area No.17 - Current

- Land Units
- King Abdullah Canal - Previously East *Ghor* Canal
- Jordan River
- Roads
- Development Area Boundary Line